

Meeting the Environmental Challenges of Sustainable Development in Scotland

A Partnership Approach

June 2003

A Scotland Europa Members Paper on
Environmental Standards, Practice and Future
Standards in Scotland

Networking Scotland in Europe

SCOTLAND EUROPA ★

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Environment Group

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This Paper is also available in electronic form at:
www.scotlandeuropa.com/private or from veronica.mcwatt@scotent.co.uk



A Word from the Commissioner

Sustainable development changes our perspectives. It forces us to have an integrated policy perspective; a wider geographical perspective; and a longer time perspective.

Delivering sustainable development is about changing the way we go about our day-to-day business as policy-makers, business leaders, NGO workers and individual consumers.

When I visited Scotland as European Commissioner for the Environment and met a broad range of stakeholders, I saw for myself the broad commitment to improve the Scottish environment and work in partnership towards sustainable development.



The European Union's watchword at the 2002 World Summit on Sustainable Development in Johannesburg was that it was time to move from words to deeds.

In this context of promoting action I warmly welcome this paper of the Environment Group of Scotland Europa. By highlighting some of the concrete activities underway in Scotland it shows the practical application of sustainability actions on the ground.

Margot Wallström
European Commissioner for the Environment

Scotland Europa Environment Group

Scotland Europa is a partnership promoting Scotland's interests to the major institutions of the European Union, the regions of Europe and beyond.

We represent more than 60 Scottish organisations drawn from many areas, including business, education, local government, trades unions and voluntary sectors. The diversity of interest across our membership gives us a powerful voice in European affairs.

We are part of the economic development body, Scottish Enterprise, and we provide intelligence, policy analysis and strategic funding advice about the European Union and its relevance to Scotland.

We operate Scotland House in central Brussels. This provides a focal point for Scottish interests in the heart of the EU. Scotland House is home to a number of partner organisations including the Scottish Executive EU Office, the Convention of Scottish Local Authorities and the Highlands and Islands European Partnership.

The Scotland Europa Environment Group comprises a broad range of public agencies, industry associations, universities, colleges and private companies. All share an interest in environmental matters. It aims to identify, and contribute to, EU laws, policies and funding issues that are:

- relevant to the environment; and
- important to its members, or to Scotland in general.

The Group also seeks to share with and explain Scottish environmental issues and practices to European partners and decision-makers. Group members are:

Bioindustry Association Scotland	Scottish Natural Heritage
British Energy	Scottish & Newcastle Plc
BT Group	Scottish Water
COSLA	Shepherd + Wedderburn
Communities Scotland	South of Scotland Alliance
East of Scotland European Consortium	Stow College, Glasgow
East of Scotland European Partnership	Strathclyde European Partnership
Electronics Scotland Ltd	STUC
Federation of Small Businesses	Tourism & Environment Forum
Highlands & Islands European Partnership	UK Offshore Operators Association (UKOOA)
Maclay Murray & Spens	University of Abertay Dundee
National Trust for Scotland	University of Edinburgh
Robert Gordon University	University of Glasgow
Scotch Whisky Association	UHI Millennium Institute
Scottish Council (Development & Industry)	University of Paisley
Scottish Crop Research Institute (SCRI)	University of Stirling
Scottish Enterprise	University of Strathclyde
Scottish Environment Protection Agency	VisitScotland
Scottish ESF Objective 3 Partnership	West of Scotland European Consortium
Scottish Financial Enterprise	Water UK
Scottish Institute for Sustainable Technology	

The Scotland Europa Environment Group can't represent every Scottish point of view or any official voice; and doesn't seek to do so.

Introduction

Scotland has made remarkable progress on the road to meeting the environmental challenges of sustainable development.

But we all know that these challenges can't be achieved overnight and in isolation. It will take long-term commitment, partnership working and changes in behaviour from organisations, businesses and individuals.

This paper sets out:

- the good practice that's going on across all parts of Scotland and that we believe other European regions and countries can learn from; and
- the challenges we face now, which may have been successfully addressed in other countries, and which we can learn from ourselves.

Scotland has certainly achieved a lot in the last six years. And over the next five years it will have to deal with outstanding challenges if it's to play a supporting role in the global and European Union's commitments on sustainable development.

So why produce this paper now?

We in Scotland Europa first examined this issue in 1997 when we published our paper: Meeting the Challenges of Sustainable Development – A Partnership Approach. This showed how Scotland was meeting the environmental challenges of sustainable development. Our paper was well received, and resulted in a number of seminars and exchanges between partner organisations across other European regions and Member States.

But much has changed in Scotland since then. There is now a Scottish Parliament, clearly the most significant political development. And the environmental agenda has also moved on, and there is much more debate in government about sustainable development as a concept. There's also been a re-affirming of the importance of the environment in Scotland, in a landmark speech on the subject by First Minister Jack McConnell, in February 2002.

Against this background, we debated whether to publish a paper on sustainable development action in Scotland. In the end, we decided to concentrate on environmental issues alone and how they have been integrated with social and economic concerns. We're confident that this paper represents some of the best, but by no means the only, action under way in Scotland in 2003.

How we gathered information

We asked our members to complete a short questionnaire, showing how they were contributing to **the 6th Environment Action Programme (6EAP)**. We were delighted at the responses we received, and our thanks go to all the people and organisations who contributed to this paper.

This paper covers the four main areas for action set out in the 6EAP, together with four other key issues of importance to Scotland:

- Climate change
- Nature and biodiversity
- Environment, health and quality of life
- Natural resources and waste
- Landscapes
- Accessing and enjoying the environment
- Environmental education
- Working in partnership (including governance and integration)

Scotland must take action in these areas if it's to move towards a more sustainable, inclusive society which contributes to the European Union's objectives in sustainable development.

Political commitment alone will not allow Scotland's people to meet our needs without compromising the ability of future generations to meet their own needs.

So we need real commitment and real action. Scotland is taking steps in the right direction but more needs to be done. And doing nothing may be much more costly than taking early action.

We would be interested to hear from European partners who have been successful in addressing any of the future challenges for Scotland.

**Scotland Europa
Environment Group**

The Sustainable Development Agenda

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." - World Commission on Environment and Development (the Brundtland Commission), 1987.

It's been five years since the environment and sustainable development began to form part of the mainstream policies of the EU. From here, they have entered policies in the UK and in Scotland.

This section outlines the main sustainable development policy papers in:

- Europe
- The UK
- Scotland

Europe

In June 1998 the EU Councils of Ministers were given the task of integrating the environment and sustainable development into their areas of policy. This was known as the Cardiff Process.

The following year the Treaty of Amsterdam embraced the principle of sustainable development. And in 2001 the Stockholm European Council decided that the EU's strategy on sustainable development should complete, and build on, the agreement reached at Lisbon¹ by including an environmental dimension. In doing so, the EU recognises that economic growth, social cohesion and environmental protection must go hand in hand in the long term.

The context for this paper is the environment component of the EU Strategy for Sustainable Development (EUSDS), namely the 6th Environment Action Programme (6EAP). The EUSDS consists of two documents:

- A Sustainable Europe for a Better World: a EU Strategy for Sustainable Development²
- Towards a Global Partnership for Sustainable Development³

These identify six main themes for action:

- climate change
- dealing with the social and economic consequences of an ageing population
- poverty and social inclusion
- managing natural resources
- improving transport systems and land-use management
- public health

A Sustainable Europe for a Better World: a EU Strategy for Sustainable Development:

This focuses on issues inside the EU. A review was planned into how the strategy was being implemented, using a small number of headline performance indicators. The review was to have been at the annual Spring Economic Council. But in both 2002 and 2003 other priorities forced the item off the agenda.

Towards a Global Partnership for Sustainable Development:

This considers the EU and the rest of the world. It was adopted in spring 2002 and in effect set out the basis for the EU negotiating stance at the 2002 UN World Summit on Sustainable Development in Johannesburg.

¹ In 2000 in Lisbon, the European Council set a new strategic goal for the European Union: "to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion"

² http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0264en01.pdf

³ http://europa.eu.int/eur-lex/en/com/cnc/2002/com2002_0082en01.pdf

It contains a number of broad challenges and, from these, six priority objectives have been chosen. These are:

- harnessing globalisation
- poverty and social development
- management of natural and environmental resources
- governance
- coherence of EU policies
- international finance for sustainable development

The 6th Environment Action Plan (6EAP) - 'Environment 2010: Our future, Our choice'⁴

This develops more specific targets for the environmental aspects of the EUSDS. The 6EAP provides the environmental component of the Community's strategy for sustainable development. It places the EU's environmental plans in a broad perspective that considers economic and social conditions.

The 6EAP identifies the environmental issues that have to be addressed if sustainable development is to come about. These are:

- climate change
- over-use of renewable and non-renewable natural resources
- loss of biodiversity
- accumulation of persistent toxic chemicals in the environment

It sets out the environmental objectives for the next 10 years and beyond. And it sets out the actions that need to be taken over the coming five to 10 years to achieve them by using strategies linked to themes.

These thematic strategies set out the overall policy approach and the proposed package of measures needed to achieve the environmental objectives and targets in a cost-efficient way.

The main mechanisms identified to implement the programme are:

- laws, including new laws
- amendments
- legal action
- voluntary agreements
- tradable permits
- taxes
- making environmental protection part of other Community policies

The programme focuses on four major areas of action:

- **Tackling climate change**

This aims to achieve the EU's target of reducing greenhouse gas emissions by 8% by 2008-2012 and target more radical global emission cuts in the order of 20-40% by 2020.

- **Nature and biodiversity**

Actions are designed to avert threats to the survival of many species and their habitats in Europe. Other actions include completing the Natura 2000 network; developing new sectoral biodiversity action plans; paying greater attention to protecting landscapes; new schemes to protect the marine environment; introducing measures to prevent industrial and mining accidents; and a strategy for protecting soils.

⁴ http://europa.eu.int/eur-lex/en/com/pdf/2001/en_501PC0031.pdf

- **Environment and health**

This entails a fundamental overhaul of the EU's risk-management system for chemicals; a strategy for reducing risks from pesticides; more protection of water quality; measures to tackle noise; and a strategy for air quality.

- **Sustainable use of natural resources and management of wastes**

This aims to increase recycling and prevent waste with the help of an integrated product policy. This entails looking at all the stages of a product's life cycle and taking action where it's most effective. Other actions include targeting specific types of waste, such as sludge and biodegradable waste.

The UK

The UK Government's strategy for sustainable development, A Better Quality of Life⁵, was published in 1999. It presents a stimulating and challenging agenda for sustainable development in the UK. The indicators associated with it are in another publication, Quality of Life Counts.

There are 15 headline indicators from a total of 147 measures to monitor and report progress towards sustainable development. Many indicators are subjective, such as measures of landscape quality, and work is continuing to refine these.

A review of A Better Quality of Life will last until 2005 so that it reflects continuing developments. As part of this, the UK Government intends to consult during 2003 on a strategy on moving towards more sustainable patterns of producing and consuming goods.

Scotland

When it was set up in 1999, the Scottish Parliament became responsible for environment and natural heritage. It's also responsible for education, housing, health (including the National Health Service in Scotland), agriculture, forestry, fisheries, planning, and local government.

These are called "devolved matters" and the Scottish Parliament can pass laws on them. The Scotland Act specifies other issues, called "reserved matters" that the Scottish Parliament can't pass laws on. These include energy, common markets, trade and industry.

The Scottish Executive – the devolved government for Scotland – therefore develops environmental policies and these become law through the Scottish Parliament against a complex background involving the UK Parliament and EU. There is also a global point of view, as UK and Scottish activities are also framed so that they contribute to important international agreements, such as the outcomes of the UN World Summit on Sustainable Development (2002).

In April 2002 the Scottish Executive published Meeting the Needs...Priorities, Actions and Targets for Sustainable Development in Scotland⁶, which sets out the Executive's approach to sustainable development.

It also sets out the Executive's vision for a sustainable Scotland, and identifies resource use, energy and travel as the three key Scottish priorities. The Executive has also set sustainable development into other policy areas, including social and environmental justice; health, education, crime and transport. The Executive has adopted 24 indicators to enable it to measure progress towards sustainability. These are in the publication Meeting the Needs.

Several non-departmental public bodies⁷ (NDPBs) help the Scottish Executive make progress on sustainable development. NDPBs are established by law and carry out administrative, commercial and executive functions on behalf of government, often providing specialist advice to Ministers and others. However NDPB staff are not civil servants.

⁵ http://www.sustainable-development.gov.uk/uk_strategy/index.htm

⁶ <http://www.scotland.gov.uk/library5/rural/mtnsd-00.asp>

⁷ A full list of NDPBs can be found at: www.scotland.gov.uk/government/publicbodies/executive.asp

Climate Change

Climate change is considered to be one of the biggest environmental threats facing the planet.

Climate scenarios generated by the UK Climate Impacts Programme suggest the following climate changes in Scotland:

- Over the next century, Scotland will become warmer. Average temperatures are likely to rise by between 1.2 to 2.6°C, with relatively more warming in winter than summer.
- Annual precipitation is likely to increase by between 5 and 20 per cent by the end of the next century, with autumn and winter seeing the biggest increases. In contrast, spring amounts will be lower and there will be little change in summer.
- The intensity of rainfall events is likely to increase, leading to increased risk of flooding.
- There may be an increase in the frequency of very severe gales but a decrease in the number of gales overall.
- The water balance is likely to remain favourable.
- Direct short-wave solar radiation is likely to reduce over the next century as a result of increased cloud cover

This section sets out how Scotland's been responding to the challenges of climate change and, in particular, at:

- How Scotland is promoting renewable energy
 - *Projects in the Highlands and Islands*
 - *Community renewable projects*
 - *Europe's first Marine Energy Centre*
- Energy efficiency and the economy
- Responding to flooding
- Easing congestion on the roads
- Cutting greenhouse gases
- Climate change, wildlife and habitats

The UK Climate Change Programme, published in 2000, is aimed at meeting the UK Kyoto commitment of a 12.5% reduction of 1990 levels of greenhouse gas emissions and moving toward the goal of reducing by 20% UK carbon dioxide emissions by 2010.

Case Studies

UK Offshore Operators Association (UKOOA)

The UK emissions trading scheme (UKETS) is the world's first economy-wide greenhouse gas emissions trading scheme. Some UKOOA members have joined it.

This will be challenging in view of the mature nature of the North Sea. After some 30 years of oil and gas production, field reservoirs are declining and more energy is needed to maximise oil and gas recovery.

Significant improvements in energy efficiency and aggressive targets to cut greenhouse gas are both needed to achieve targets for reducing emissions. Operational adjustments and specific projects will help achieve these.

UKETS has highlighted both general awareness and how important it is to reduce emissions sustainably. This awareness has spread throughout the offshore industry and as UKOOA Members take part in UKETS, they can share what they've learned with all UK offshore operators.

(UKETS: <http://www.emissions-trading.info>)

Tourism & Environment Forum (TEF)

TEF partners VisitScotland, Highlands & Islands Enterprise and Scottish Enterprise Network joined forces to develop the Green Tourism Business Scheme (GTBS).

Since 1997 over 400 tourism businesses have joined it. Its aim is to reduce the impact of Scottish tourism businesses on the environment. An important step towards this is greater energy efficiency.

TEF has also promoted the Hotel & Catering International Management Association's 'Hospitable Climates' programme to tourism businesses in Scotland. This helps tourism businesses cut how much energy they use. Over 90 Scottish tourism businesses have so far signed up.

SISTech

SISTech, the Scottish Institute for Sustainable Technology, has teamed up with Steer Davies Gleave, PPS public affairs company, the Scottish Executive and several local council areas to encourage people to change behaviour.

The 'Travel Behaviour Change Pilot' has just received a €700,000 grant to carry out a pilot scheme in three local council areas.

As well as attempting to influence behaviour, it will measure issues such as CO₂ emissions and how many miles people travel.

SISTech will manage the project and will also make arrangements to independently monitor and evaluate the pilot scheme.

Strathclyde European Partnership (SEP)

SEP encourages all the projects it supports to use good energy efficiency practice.

It has also supported a small number of projects that look explicitly at this issue; for example, the University of Strathclyde's "Transferring Integrated Modelling Systems to Energy Sector SMEs" project.

The university hosts the Scottish Energy Systems Group, an SME industry club that aims to transfer best practice and research from the academic to the business world. It focuses particularly focus on energy efficiency in built-up areas.

The group provides services such as:

- making information available
- training
- supporting in-house software programs; and
- running a formal certification scheme.

The results are lower costs because of better use of energy in buildings and processes. This is in line with the Scottish Executive's Climate Change Programme. A student placement programme helps SMEs put good practice into practice.

The Scottish Executive is committed to making an equitable contribution to the UK Kyoto commitment and, in November 2000, published the Scottish Climate Change Programme⁸, setting out Scotland's contribution to the UK Programme. The Executive will review its Programme in 2004.

How Scotland is promoting renewable energy

Scotland has the highest potential in Europe to develop renewable energy to benefit jobs and sustainability.

The Scottish Executive is committed to a target of 18% of electricity being generated from renewable sources by 2010. The Executive feels the market will need support to achieve this. But it believes its policies and commitment, together with Scotland's natural resources and expertise, make 40% of Scottish electricity coming from renewable sources by 2020 a realistic aim.

Scotland has a significant potential to develop renewable energy, thanks to the strong tides and high winds, particularly along the coast of the Highlands and Islands, and Scotland's forestry industry.

Recent research suggests that the renewable energy sector could create up to 4,000 jobs throughout the Highlands and Islands. Much of this job creation will benefit the most remote areas – providing a sustainable future for many fragile communities and alternative employment to those leaving the oil fabrication industry.

Scotland has the potential to use a variety of renewable energy sources. These don't just include wind power, both on and off-shore. Wave and tidal power and wood and other bio fuels also offer potential. Scottish Natural Heritage (SNH) is encouraging a planned approach to how these are exploited.

An example is the SNH publication: Strategic Locational Guidance for Onshore Wind Farms in respect of Natural Heritage Interests⁹.

This sets out the main sensitivities – from the perspective of natural heritage – to wind farms. It also gives advice on the areas best suited, in natural heritage terms, to wind farms. It identifies three types of sensitivity to wind farm developments: least, medium and high. It classifies around 25% of Scotland as "least sensitivity", another 25% as "high sensitivity" and the rest as "medium sensitivity".

For example, in medium sensitivity areas, SNH sees scope for wind farm development, but says the sites, scale and design of wind farms should avoid

⁸ Available on the Scottish Executive climate change web-site at: www.scotland.gov.uk/climatechange/

⁹ <http://www.snh.org.uk/strategy/sr-frame.htm> (go to policy statements).

damaging the natural heritage.

The publication reveals significant opportunities for growth. But it highlights that attempts to meet a 40% target by relying mainly on on-shore wind will lead to increasingly difficult trade-offs with the natural heritage, especially the landscape.

Projects in the Highlands and Islands:

The Highlands and Islands Enterprise (HIE) network has been and is currently involved in a number of projects across the area. These range from marine energy to biomass. Some of the larger projects it's been supporting in recent years have been:

- HIE built a €13 million (of which €5 million was European funding) wind turbine plant at Machrihanish, Campbeltown for Vestas wind turbine manufacturers. This plant now employs more than 160 staff, mainly recruited from the former Campbeltown shipyard. HIE has recently invested a further €900,000 to extend the plant, reflecting how this sector has grown.
- HIE provided €3.6 million towards a €8 million project to establish Cambrian Engineering, the UK's largest offshore wind tower manufacturer, at the former oil fabrication yard at Arnish Point in the Western Isles. This project will create 65 jobs. It will also be a significant opportunity to further develop the renewable energy sector in the Western Isles and beyond. Negotiations are taking place with two more renewable energy sector suppliers interested in setting up businesses at Arnish Point.
- HIE is continuing to work with partners from the private sector to take forward wind farm developments, both on-shore and off-shore. These include the Lewis Wind farm development in the Western Isles. They are also working on ways to tackle limited capacity in the national grid. These include laying a cable under the sea to the Western Isles.
- Important aspects of this work include making sure that local businesses are part of the supply chain, and that communities benefit from wind farms.

Community renewable projects:

In addition to the above wind energy projects, HIE set up a Community Energy Unit in 2002 to deliver the SCRI (Scottish Community Renewables Initiative). There are eight local project officers throughout the Highlands and Islands supporting communities with community renewable projects.

BT Group

Since 1991 BT has introduced energy programmes that have cut CO₂ emissions by 63%.

In 2000 BT hired AEA Technology to carry out a study that showed the benefits of sustainability were as much as six times more than the extra costs of buying green electricity.

The study also showed that buying 3% of electricity from renewable sources would deliver benefits worth more than €900,000 a year to the wider community in terms of lower emissions and less pollution.

In 2001/2002 BT exceeded its 3% target and bought 4.6% (93 GWh) of its total electricity needs in the UK from renewable sources. BT also secured the UK's largest Combined Heat and Power (CHP) contract to supply 1.5 TWh of electricity. The new CHP-based energy produces 40% less CO₂ than conventional power stations and represents around 75% of BT's electricity use.

Taken together, these initiatives will reduce BT's CO₂ emissions by 290,000 tonnes a year.

BT's fleet of 37,509 vehicles is one of the largest in the UK and mostly runs on diesel. Over the past five years the size of the fleet fell by 4%, while the quantity of fuel the fleet used fell by 13%. Productivity targets, operational policies and environmental awareness programmes all helped achieve the reductions.

Since 1992 BT's transport programmes have reduced CO₂ emissions by 27%.

UHI Millennium Institute

The Environmental Research Institute (ERI) at North Highland College in Thurso covers a wide range of functions. It can therefore accommodate and undertake environmental research activities in many areas.

Work at the ERI includes several research projects on Climate Change, such as 'Assessing regional land use change in Highlands & Islands of Scotland associated with global climatic change'. This is a PhD studentship in conjunction with the University of Stirling.

The ERI also undertakes work in pollution, water and remediation, marine and atmospheric science and innovation in natural products.

Scotch Whisky Association

Distilleries have reduced the amount of energy they use by improving how they control processes and recover heat.

One improvement that cut energy use by a third involved installing a heat recovery scheme that recycled heat from the condensers. The then Department of Energy chose it as an example of good practice. In Islay, excess heat from a distillery heats the island's first swimming pool. This is in a former distillery warehouse donated for the pool. Some grain distillers have made substantial investment in Combined Heat and Power systems, generating both electricity and steam, and creating considerable savings in emissions.

Under the UK Government's Climate Change Agreements scheme, between 1999 and 2002 alone, the whisky industry cut by 2.6% the amount of energy it used to produce each litre of whisky. This was above its first target. The total amount of energy that the industry used for distilling fell by 6% over the same period.

At one distillery a pilot plant is removing copper from spent lees, using membrane filtration, ion exchange and electroplating. The copper that's recovered is processed into sheets so it can be used again. The impact of this pilot scheme is being assessed.

A Speyside distillery has created a wetland area – an artificial marsh – to remove copper and improve the performance of a biological treatment plant.

A project at Loch Harport on Skye studied waste that enters the sea from a distillery. It focused particularly on copper and its impact. The result will help form future regulations. SEPA and the Malt Distillers Association of Scotland are working on these.

Further work has shown there are no toxic effects on the sea from waste from distilleries on Islay. The results have also been given to SEPA.

Many distilleries prefer using natural gas as their main fuel. This reduces CO₂ emissions, almost eliminates sulphur and particulate emissions, and enables good control of oxides of nitrogen (NO_x).

These include:

- a community swimming pool at Bettyhill, on the north coast of Sutherland; this uses wood-chip from local sources to generate heat; it is also investigating getting wood from clearing the nearby Flow Country;
- a wind-powered community on Papa Westray, Orkney; and
- a community recycling centre on the island of Bute.

Europe's first Marine Energy Centre:

Meanwhile, HIE along with Scottish Enterprise and other public bodies, are supporting Europe's first Marine Energy Centre.

This is being set up near Stromness in Orkney and will provide ideal sea conditions – the best in Europe – for full-scale sea trials of emerging wave energy devices from Scotland, UK, Europe and beyond. Tidal stream designs will follow later.

It intends to establish itself as the recognised centre for setting standards for this new industry, including:

- accreditation;
- measuring performance; and
- setting benchmarks of reliability.

The Enterprise Networks will work closely with the Centre over the coming years to help make sure that as many academics and industrial customers as possible use it.

Scotland's oil and gas industry specialists have the key skills and engineering expertise to help design, make, install and maintain marine energy devices.

Energy efficiency and the economy

For Scotland's economy to be sustainable, growth must not put pressure on the environment. That way, Scotland can prosper while reducing the impact on the environment.

In particular, the Scottish Executive is seeking to cut the Scottish economy's carbon intensity – the amount of carbon emitted for every unit of GDP.

The Carbon Trust runs programmes aimed at encouraging reductions in business energy consumption and fostering research into low carbon technology.

- Low Carbon Innovation Programme

The Low Carbon Innovation Programme is aimed at assisting the commercialisation of innovative low carbon technologies. This will contribute to reducing the carbon intensity of the economy and assist British businesses capitalise on the large predicted global demand for such products.

- Action Energy Programme

The Action Energy Programme provides practical assistance to business and public sector organisations to assist them to reduce energy consumption. Recent impact analysis shows that the programme is saving an additional 25,000 tonnes of carbon each year.

Two publications set out the Scottish Executive's approach:

- The Framework for Economic Development in Scotland¹⁰ sets out the Executive's vision to raise the quality of life of the Scottish people by increasing economic opportunity for all in way that's sustainable socially and environmentally. Scotland's Enterprise Networks are key partners in delivering this.
- A Smart, Successful Scotland: Ambitions for the Enterprise Networks¹¹ describes the Executive's strategy for long-term economic development.

The Scottish Executive is committed to tackling the energy inefficiency that causes fuel poverty. Sustainable communities are those where people can afford to keep adequately warm at a reasonable cost. The Executive's target is to end fuel poverty by 2016.

Responding to flooding

Whilst primary responsibility for the provision of flood defences and maintenance of watercourses lies with the land and riparian owners, local authorities have certain discretionary powers and statutory duties to allow them to take measures to prevent or mitigate flooding of non-agricultural land in their areas.

Local authorities can take forward new flood defences and maintenance of water courses to benefit non-agricultural land. Additionally, local authorities have a duty to maintain watercourses where this will substantially reduce the likelihood of flooding of non-agricultural land. The immediate emergency response to incidents of flooding involves a joint response from the police and local authorities.

Scottish Water

Scottish Water as a major energy user is aware of its impact on climate change and contribution to greenhouse gases.

Actions to reduce the impacts of climate change involve tackling energy consumption and reliance on fossil fuels in order to achieve reductions in greenhouse gas emissions.

Its major policy documents include commitments to sustainable development and making the best use of energy. Scottish Water is taking part in the Climate Change Network, a working group in that involves the Scottish Executive and the SEPA. The group is looking at how climate change is affecting the water environment and at measures to tackle the effects.

Scottish Water aims to supply 7% of its total energy needs from renewable sources by 2005-06. It is also developing renewable energy schemes at several sites. These include small wind turbines, hydro power and gas from sludge.

Sustainable development also features in Scottish Water's fleet business plan, and in how it manages travel and transport.

It is developing a sustainable transport plan to help manage the impact of travel and transport by:

- Cutting the number of vehicles in Scottish Water's fleet
- Reducing the fleet's mileage and fuel use
- Introducing driver training. This is expected to cut the fleet's fuel use by 3%
- Ensuring new vehicles are fuel-efficient and have low emissions
- Monitoring and, if viable, introducing alternative fuels and technology
- Trying to get Reduced Pollution Certificates for large goods vehicles
- Encouraging the most effective use of business mileage and, if possible, to cut mileage
- Encouraging car sharing for business travel and commuting
- Encouraging public transport for business journeys where possible
- Giving interest-free loans to buy season tickets for public transport and to buy bicycles

¹⁰ Available on the Scottish Executive website at: www.scotland.gov.uk

¹¹ Available on the Scottish Executive website at: www.scotland.gov.uk

- Introducing flexible ways of working, such as video-conferencing, working from home and hot-desking.

Stow College, Glasgow

Stow College has been involved in a number of schemes to develop the curriculum in the area of energy.

The College has worked in partnership with the Scottish Energy Efficiency Office (SEEO), consultancies, the Building Research Establishment (BRE) and the Carbon Trust.

Stow has been involved in a study to find out how to tackle the lack of technical skills needed to help meet government targets to cut emissions.

This showed that more people were needed with energy-auditing skills. As a result, the partnership developed a new award of Advanced Diploma in Energy Auditing. This is a continuing professional development award to provide technical skills to make energy management effective.

A Fast Track option was introduced for people working in this type of work and who were interested in having their skills certified.

The project has also developed targeted units which aim to change people's attitudes and behaviour to environmental issues. These units are tailored to suit the needs of people's places of work.

Other units are aimed at energy efficiency. They are:

- "Contributing to Energy Efficiency in the Workplace"

This considers how workers can contribute to an organisation's efforts to use energy efficiently. It aims to raise awareness and to encourage people to change their behaviour.

- "Promoting Energy Efficiency in the Workplace"

This helps people understand the concept of energy efficiency and to find out about how to improve energy efficiency where they work.

In response to climate change, the Scottish Environment Protection Agency (SEPA) has commissioned and is about to publish, land and sea temperature indicators for Scotland.

These show increases in line with global modelling predictions. SEPA is the hydrometric authority for Scotland and operates around 400 rain gauges and 400 river flow stations throughout the country.

River flow data suggest statistically significant upward trends in mean river flows, particularly in western areas and particularly in winter. There is also a significant increase in the number of high flow events.

There have been several notable floods over the past decade.

SEPA takes part in several climate change research forums and is closely involved with the UK Climate Impacts Programme.

It continues to invest in strengthening its ability to analyse flood risk and to extend and improve its flood warning system. It has recently begun a coastal storm surge warning service for the Firth of Clyde and a new Scotland-wide public advisory service called Floodline.

Easing congestion on the roads

Traffic on Scotland's roads is forecast to rise by 27% by 2021¹². This increase is not sustainable. People should have much greater access to services and goods without needing to travel. The Scottish Executive has set itself a target to stabilise road traffic at 2001 levels by 2021.

The Executive's main goal¹³ is to tackle the challenge of congestion in and between towns and cities. It plans to do this by investing in various measures, such as:

- modernising and improving public transport;
- promoting alternative forms of transport to the private car; and
- targeted improvements to motorways and major roads.

The Executive will also undertake a comprehensive review of targets set by Scotland's four largest cities – Aberdeen, Dundee, Edinburgh and Glasgow – and by their neighbouring councils. These include what measures they are going to take to deliver the targets by 2021. The focus is on these areas because it's here that 80% of the increase in road traffic is forecast.

¹² The figure of 27% comes from the Review of Local Transport Strategies and RTRA Reports prepared by Steer Davies Gleave in October 2001.

¹³ Outlined in Scotland's Transport: Delivering Improvements (Scottish Executive, March 2002).

The Scottish Executive encourages sustainable freight transport by rail and water. The Freight Facilities Grant Scheme is designed to reduce congestion and pollution caused by transporting freight by road, which is the main means of transporting goods in Scotland. This scheme helps with initial capital costs.

The Executive has achieved its March 2003 target of making awards that will transfer 21 million lorry miles each year off the roads and on to rail and water. The next target is to transfer a further two million lorry miles a year by March 2004.

In May 2002 a new Superfast ferry service became Scotland's first direct ferry service to mainland Europe. This project was able to proceed by the Executive providing the €15 million funding for a Freight Facility Grant.

Scottish Enterprise played an important role in helping to set up and launch the new service, which runs between Rosyth, Fife and Zeebrugge.

It's helping the economy by boosting trade, as companies save in logistics which, in turn, helps them become more competitive. And it's helping tourism. Recent surveys show visitors using the ferry are staying longer and spending more.

And it's helping the environment by cutting congestion and road travel. It means up to 38,000 fewer lorries a year will be on the roads between England's ports and Scotland.

Cutting greenhouse gases

Between 1990 and 1999 greenhouse gas emissions for Scotland fell by 4.8% to 19.9 million tonnes of carbon equivalent. Throughout the UK, emissions of greenhouse gases in 1999 were 14% below their 1990 levels.

The UK Department of Trade and Industry (DTI) produces projections of energy use and carbon emissions. For 1990-2020 these show energy use growing steadily, but at a rate lower than economic growth.

The size of the Scottish economy means that greenhouse gas emissions are extremely sensitive to any likely changes to investment in the market for generating electricity. Other factors to bear in mind include what happens to the flow of electricity through the electricity network, and the effect that changes in world oil prices can have on the competitiveness of coal.

These issues – along with the fact that all modelling is subject to uncertainty – mean that projecting carbon emissions in Scotland is imprecise.

It was designed for supervisors and middle managers responsible for putting energy management policies into practice.

The Scottish Qualifications Authority (SQA) validated both units, which the College has rolled out to Access and HNC engineering students.

ScottishPower

ScottishPower is the UK's leading developer of renewable energy and one of the market leaders in green energy products and services.

The company is the UK representative of e7, a group of international energy companies committed to further sustainable development.

In the early 20th century, Scotland led the evolution of renewable energy in Britain, combining its geography and engineering talent to develop hydro-electric power for public electricity.

Today one of the areas of focuses is on wind power. ScottishPower has 11 wind farms in the UK and the Republic of Ireland. Recently, it has announced plans to increase wind power development within Scotland and has a range of projects currently within the planning process – more than any other UK development.

ScottishPower is also exploring the potential of offshore wind energy development.

The firm has also been examining what's needed to allow the grid to deal with expanding renewable electricity generation. Furthermore, it has also introduced green energy products and worked on customer energy efficiency campaigns.

However work done for the Scottish Executive suggests that Scotland's 1990 emission level could fall by between 4.7% and 16.6% by 2010. This reflects the combined effects of the UK and Scottish Climate Change Programmes.

As Scotland's environmental regulator, SEPA has some influence over the emission of some types of greenhouse gases. SEPA also encourages industry to use energy and resources more efficiently.

SEPA has set, and reports each year, targets to reduce the impact of its own business activities on the environment. SEPA has met, ahead of schedule, a target to reduce carbon dioxide emissions.

Climate change, wildlife and habitats

Scottish Natural Heritage (SNH) is involved in monitoring and modelling how climate changes are affecting species and habitats.

This is helping provide science-based advice on adapting conservation policies and measures to the impact of climate change.

SNH's work in this area includes:

- Getting involved in the UK's Environmental Change Network

This involves following standard protocols to collect biological chemical and meteorological data at a number of locations across the UK. This is a long-term commitment to collecting data to help quantify long-term trends and relationships between biological, chemical – including air, soil and water – and meteorological factors contributing to an ecosystem.

- Collecting and analysing phenological changes

This is also part of a UK project. Phenology is the study of organisms as climate changes affect them, for example, the timing of spring budding, egg hatching or the turning of autumnal colours.

- Getting involved in the MONARCH project

SNH is helping find the extent of likely changes in how species are distributed and what effects this has on ecosystems. Modelling Natural Resources Responses to Climate Change (MONARCH) is a project that covers the British Isles.

Nature & Biodiversity

The diversity of life is at the centre of Scotland's natural resources. The state of Scotland's biodiversity is a key measure of its success in achieving a sustainable way of life.

Conserving and enhancing biodiversity is an insurance policy for the future. This section looks at the role played in this by:

- The Scottish Biodiversity Forum
- The UK Biodiversity Action Plan
- Local Biodiversity Action Plans
- The Habitat Enhancement Initiative
- New laws and strategies

The Scottish Biodiversity Forum

The Forum was formed in 2002, replacing the Scottish Biodiversity Group (SBG) set up in 1996 to allow Scotland to make progress on the UK Biodiversity Action Plan and the Convention on Biological Diversity.

The Forum's work is steered by a partnership involving:

- Local government
- National government, its agencies and sponsored bodies
- Non-governmental organisations (NGOs)
- Businesses and private organisations

During 2002-03, the body has made progress on developing a biodiversity strategy for Scotland. This is meant to complement work being done to implement UK action plans for priority habitats and species. It does this by looking at actions that cut across different areas to make sure that biodiversity objectives become part of policies in different sectors.

The strategy, published for consultation in February 2003, lays down a clear 25-year vision for biodiversity in Scotland. It envisages Scotland as a nation where conserving and enhancing biodiversity is part of making decisions and putting them into practice. It would therefore make sure the environment is sustained for the Scottish people.

It proposes two main aims linked to this:

- To halt the loss of Scotland's biodiversity and continue to reverse previous losses by targeting actions for species and habitats
- To raise awareness of the many benefits of biodiversity by significantly increasing the number and range of people who contribute to conserving and enhancing biodiversity

Case Studies

Scottish Enterprise

Central to Loch Lomond and the Trossachs National Park, Loch Lomond is perhaps one of Scotland's greatest natural assets. The Lomond Shores project aimed to maximise the tourism potential of the area by creating a visitor attraction on the southern shores of the famous loch. A visitor centre, National Park Gateway and speciality shops and restaurants have been incorporated into the €84 million development at Balloch. Scottish Enterprise Dunbartonshire, which was a major backer, hopes the project will generate €50 million a year in tourism spending in the area and up to 1,000 new jobs.

Sustainability issues were addressed by:

- building on reclaimed industrial land rather than encroaching on the existing shoreline;
- channelling visitors away from the more ecologically-sensitive areas;
- providing local jobs in an area of high unemployment;
- providing education facilities for school children focusing on the environment and society; and
- developing a wide ranging programme of community partnerships.

Scottish Water

Stewardship is one of Scottish Water's 10 key commitments. It encompasses protecting and enhancing natural heritage and biodiversity.

Scottish Water has a continuing project to promote biodiversity around its treatment works. It includes tree planting, altering grass-cutting regimes and creating wildflower areas.

Scottish Water also consults with Scottish Natural Heritage before any major project and seeks to keep its impact on the environment and natural heritage to a minimum.

Scotch Whisky Association

Distilleries are increasingly adopting land management practices designed to sustain or increase the biodiversity of their sites and the surrounding area.

UK Offshore Operators Association (UKOOA)

Oil and gas reserves are sometimes found in areas of particular environmental sensitivity and UKOOA has provided its members with guidance on working in these areas.

Working with the Government, UKOOA has established a new environmental assessment regime for use offshore. The industry has carried out extensive environmental surveys in sensitive areas. For example, it has helped local authorities draw up protection plans for the north Scottish coast, Orkney, Shetland and Western Isles. Industry surveys are a major source of information about the marine environment generally and sensitive areas in particular.

Implementing the Habitats Directive offshore extends the scope of environmental impact assessments to the full range of existing operations. It specifically addresses particular species or habitats where industrial activity might have an adverse impact. The industry's priority is to improve its environmental performance and advances in technology are helping achieve this. A good example is reducing oil in produced water – water produced during production processes. Thanks to new technology, the average content of oil in is well below the legal target of 30 parts per million set by the Oslo and Paris Commissions (OSPAR).

Tourism and Environment Forum (TEF)

TEF partners and the TEF executive have worked on projects to raise awareness of Scotland's nature and wildlife among tourism businesses and visitors to Scotland. Training courses led by Scottish Natural Heritage (SNH) are helping tourist information staff and accommodation providers understand the nature around them.

A major wildlife tourism conference was organised in May 2002. Wildlife tourism businesses have attended several meetings and are now setting up their own organisation to agree visitor and conservation standards.

And VisitScotland has established a wildlife tourism marketing post within VisitScotland and are working on a wildlife tourism brochure.

Plans to implement these aims are being developed covering urban, marine and rural themes. These will link to existing strategies, covering various sectors that already include biodiversity objectives. Examples include the Scottish Forestry Strategy, Forward Strategy for Scottish Agriculture, and the developing Scottish Coastal Strategy.

The UK Biodiversity Action Plan

Putting the UK Biodiversity Action Plan into practice has allowed Scotland to contribute significantly to the 5th and 6th EAPs since 1997.

The Action Plan is the UK's contribution to the Convention on Biological Diversity. It has helped Scotland:

- generate action plans for priority habitats and species;
- develop a Scottish Biodiversity Strategy; and
- implement EU nature conservation laws, especially the Habitats and Birds Directives.

The Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH) are closely involved with implementing the UK's Biodiversity Action Plan (BAP) in Scotland. Both SEPA and SNH contribute to all 25 BAPs in Scotland, and to several UK level steering groups for national habitat or species BAPs. SEPA is also the UK lead partner for the mesotrophic lakes action plan.

Local Biodiversity Action Plans

Local partnerships are also helping achieve action for biodiversity by implementing Local Biodiversity Action Plans (LBAPs).

The process of Local Biodiversity Action Plans in Scotland is widely recognised as one of the outstanding biodiversity successes in the UK. There are partnerships in all local council areas and all but one has either plans in the pipeline or published.

Local biodiversity projects have been very successful at getting communities and organisations involved and have brought a wide range of partners together. In this way local people's hopes and concerns for local wildlife are in line with national and international views.

For SEPA, protecting and enhancing Scotland's biodiversity are essential to achieving sustainable development.

The Habitat Enhancement Initiative

SEPA established the Habitat Enhancement Initiative (HEI) in 1999.

The HEI promotes measures to conserve and enhance the natural beauty and amenity of rivers, lochs and the sea, and nearby land areas.

These environments provide important habitats that support a wide range of species. But they're also often subject to threats – particularly pollution, development and poor management practices.

The HEI aims to make measurable improvements to the aquatic environment by:

- raising awareness of best management practices;
- making information available; and
- providing guidance.

Amongst other activities, the HEI is currently developing guidance documents, publishing information leaflets and establishing demonstration sites and an award scheme. SEPA is committed to 15 HEI schemes per year.

New laws and strategies

- The proposed Nature Conservation (Scotland) Bill:

This suggests that all public bodies should have a duty to take action to conserve biodiversity. It is an emphatic link to the Scottish Biodiversity Strategy and is potentially a powerful way of enforcing joined-up approaches.

The Bill includes changing the law for the domestic system of protected sites for nature conservation (Sites of Special Scientific Interest – SSSI). The changes would put more emphasis on local involvement and positive management.

Over 12% of Scotland is covered by over 1,400 SSSIs. In most cases, at least on land, SSSIs underpin the network of Natura 2000 sites under the EU Directives. The Natura 2000 site network is made up of more than 225 Special Areas of Conservation and over 130 Special Protection Areas. These cover about 9% of Scotland.

A scheme called Natural Care is aimed at helping land managers manage these sites positively for species and habitats. It has received funding of €6.4 million in 2001-02 and funding is expected to rise to more than €10.5 million a year. From 2008-09 onwards, about 85% of land is expected to be under assured management. A system of site condition monitoring at all SSSIs helps support management

BT Group

Most of BT's impact on biodiversity is not directly through land holdings, but indirectly through how it uses transport, energy and natural resources.

At sites covering significant areas of land, BT works with appropriate organisations to conserve biodiversity.

BT also has positive impact on biodiversity through its procurement, property and product stewardship programmes. It does this, for example by:

- using only poles from sustainably-managed forests
- changing solvent-based paints, used to spray large microwave towers, to water-based ones
- putting in place a comprehensive recycling programme, for BT and its customers, that prevents over 25,000 tonnes of waste a year ending up in landfills. This is 18% of BT waste. Items such as cable, batteries, oil, mobile phones, paper, toner cartridges and telephone directories are all recycled
- using fresh air, rather than refrigerated cooling at many new flexible "workstyle" office buildings and telephone exchanges. Many also feature bird and bat boxes to encourage local biodiversity

To progress its biodiversity strategy BT has worked with Forum for the Future to focus on:

- the impact of the telecommunications industry on biodiversity; and
- best practice business approaches to managing biodiversity in telecommunications and other industries.

BT has in the past sponsored "Grounds for the Future" to promote biodiversity in schools. The firm is now sponsoring the GLOBE UK schools project to measure local biodiversity indicators and to post these on to a database using the internet.

Clackmannanshire Council

The Black Devon Wetland strategy is based around a controlled breach of flood embankments on the river Black Devon. This allows a reclaimed area of salt marsh adjacent to this tidal part of the river to flood.

Clackmannanshire is working in partnership on this innovative project to help prevent flooding at existing and new developments caused by global warming.

The seven-hectare site aims to demonstrate how to protect habitats and increase biodiversity in an area of international ornithological importance – the nearby upper Forth has recently been listed as a Special Protection Area under the European Birds Directive.

This project has been combined with ground modelling to create permanent lagoons. These are an alternative to enhancing or removing flooding defences in the face of increasing pressures on existing tidal embankments and salt marsh and tidal areas – pressures caused by sea level changes due to global warming.

The Council is planning more work, including tree planting; and grazing management to encourage ground nesting birds. The project will also provide recreational opportunities for the community of south-east Alloa.

UHI Millennium Institute

UHI's HNC and HND Applied Environmental Science Courses are based on the environmental study of the Highlands and Islands. They include a practical training element for a career in the environmental sciences. Access to the BSc Applied Environmental Science at Levels 2 and 3 is possible.

and ensures that the quality of all SSSIs is checked on at least a six-yearly cycle.

Scotland has been to the fore in developing management schemes for European marine sites. This involves stakeholders in identifying measures necessary to safeguard habitats and species. This work was initially supported through a LIFE Nature project.

Laws for protected sites complement other laws that protect species. Again the draft Nature Conservation (Scotland) Bill strengthens existing measures, including those that protect species listed in EU Directives.

- The Forward Strategy for Scottish Agriculture:

This was launched in 2001. Its associated document is: Custodians of Change. It was prepared by a cross-section of experts and focuses on environmental aspects of farming. The Scottish Executive largely agreed it in 2002.

Many of the improvements the strategy will make to looking after the environment depend on reforms to the Common Agricultural Policy. They mark a shift towards recognising the wide range of 'public goods' that can be supplied by farming (such as biodiversity, rich and varied landscapes, and beautiful settings for walks). Because of the difficulties in attaching a monetary value to these public goods, they are often undervalued in policy decisions.

Land Management Contracts are a potentially exciting proposal. They would establish whole-farm approaches to land management and associated payments.

- The Scottish Forestry Strategy:

This was launched in 2001 and highlights the social, environmental and economic benefits of expanding Scotland's forests. It aims to enhance the diversity of forests in terms of their structure, age and species. This in turn is aimed at providing landscape, amenity, biodiversity, and commercial benefits. These may vary from area to area.

Great progress has been made in achieving certification of Scotland's forests under the Forestry Stewardship Council (FSC) scheme. All the public estate and much of the private estate is now certified under this scheme. All Scotland's leading timber products manufacturers now offer FSC labelling on their products.

- Natural Heritage Futures

Over the past five years Scottish Natural Heritage (SNH) has developed an approach that integrates

biodiversity objectives with other natural heritage objectives.

“Natural Heritage Futures” sets out a vision for the next 25 years to bring together natural heritage objectives and socio-economic objectives, both at a local level in 21 different parts of Scotland, and for six national themes¹⁴.

- Indicators:

There have been many developments in the field of indicators over the last five years.

Scotland has focused on 24 indicators linked to the themes of resource use (including waste), energy, and transport. These themes are set out in: Meeting the Needs...Priorities, Actions, and Targets for Sustainable Development in Scotland.

The UK Government’s 1999 publication: Quality of Life Counts has 147 indicators, of which 15 are headline indicators. Work is continuing to develop some of these, including less quantifiable ones relating to quality of life, sense of well-being or landscape quality. In 2002 the European Environment Agency consulted on a proposed set of over 400 indicators. The Agency aims to reduce this to around 120 and to recommend these are used to monitor progress on implementing the EU Sustainable Development Strategy.

¹⁴ www.snh.org.uk/futures

Environment, Health & Quality of Life

There's an important link between the quality of the environment and people's health and quality of life. This section covers:

- Environmental justice
- Community capacity building for
- How money is being spent in communities
- Why we should develop green spaces in our towns
- An environmental health surveillance system for Scotland

Environmental justice

It's often communities that are already socially or economically deprived that are most vulnerable to negative environmental impacts.

Environmental justice aims to make sure that:

- no community, particularly those already suffering the greatest deprivation, carries an unfair burden of poor environmental conditions; and
- everyone has access to the information and processes they need to participate fully in decisions affecting their local environment.

The Scottish Executive is committed to the principles of environmental justice. It is currently planning how to put the provisions of the Aarhus Convention in place. This will make sure the public has access to environmental information; can take part in certain procedures of public bodies in environmental topics; and has access to justice.

Community capacity building for environmental justice

Building capacity within communities to tackle local environmental issues is an essential element of achieving environmental justice.

A new environmental audit tool kit and a website are now being developed, with support from the Scottish Executive. It will offer advice to communities on how to carry out local projects and learn from other successful community initiatives.

Friends of the Earth Scotland, with funding from the Scottish Executive and the environmental regulator SEPA, is currently investigating how best practice agreements between businesses and local communities – called Good Neighbour Agreements – could be used in Scotland.

Case Studies

UK Offshore Operators Association (UKOOA)

Health in the oil and gas industry

The industry has re-affirmed its commitment to placing the highest priority on the safety of its workforce. Under the Government/Industry body, PILOT, the industry's initiative – A Step Change in Safety – has been reinvigorated. The industry is committed to making the UK Continental Shelf the safest offshore region in the world by 2010. By working in partnership with Operators, Contractors, Unions and the HSE, new projects will be implemented in 2003 to reinforce engagement with the workforce in order to deliver the industry's vision for 2010.

Quality of Life

The oil and gas industry has brought many benefits to our lives. Their products support us in many ways - supplying energy to power industry and heat homes; fuel for transport to carry goods and people; and the raw materials from which we derive many items we use every day. UKOOA members have taken part in:

- schemes to improve fuel efficiency and reduce emissions through their wider research and development activities; and
- studies which will help develop tomorrow's lower emission vehicles and fuels in a cost-effective way

Scottish Water

Scottish Water's programme of improving wastewater treatment around Scotland is making a significant improvement to river and coastal water quality. The number of bathing waters passing water quality standards is increasing. As the water quality gets better, more people visit the beaches. Fife Council has four Blue Flag beaches and uses this to promote the area to visitors. Other communities aim for Blue Flag or Seaside Award status once their water quality has improved. Over the last five years, Scottish Water has invested in new treatment works and technology and this is having an impact on the quality of water. These improvements to the quality of the drinking water also contribute to public health.

Highlands & Islands Enterprise

A sustainable local food economy has been promoted by Skye & Lochalsh Enterprise with a €63,000 grant from the Scottish Executive. The money was used to develop:

- an integrated processing and distribution centre;
- new products from local produce; and
- find ways to reduce the amount of produce imported from other areas.

Scottish Enterprise

3000 jobs and a community nature reserve will be created as part of the Gartcosh Regeneration Project. The former steel works site will become a model of sustainable development, using renewable energy and benefiting from strong rail, bus, cycle and pedestrian links. A large number of rare and protected species live on the site, including the Great Crested Newt and other amphibians, otter, dragonflies, damselflies and breeding birds, rare plant species, bats, badgers and water vole. The scheme has been designed to incorporate biodiversity enhancement, with the close involvement of Scottish Natural Heritage. This includes:

- creating a 29 ha nature reserve suitable for a wide variety of species;
- transplanting rare and regionally important species from development areas; and
- planting meadows with a range of wildflowers.

The project is supported by Scottish Enterprise Lanarkshire, North Lanarkshire council and ERDF.

BT Group

BT has been using its products and services creatively to help reduce the amount of finite materials it uses and to improve the work-life balance of employees.

The company has been reaping the benefits from:

- phone and video-conferencing;
- more flexible workstyles; and
- e-business.

Now technology is giving BT employees the freedom to work away from the office, with all the resources they need to do their jobs effectively.

How money is being spent in communities

In 2001/02, the Scottish Executive's Quality of Life Initiative set aside €133 million for local councils to spend under two main themes: Children & Young People and Our Local Environment. An extra €250 million has been allocated over the next three years for these programmes.

This extra money is for councils to spend on a range of projects including recycling; tackling litter, graffiti, vandalism and dog fouling; play parks and recreational facilities; and improving local roads and footpaths.

Other projects include:

- €28 million to introduce neighbourhood wardens and other measures to tackle anti-social behaviour
- Funding to clean up and reclaim contaminated and derelict land that is creating health risks or blighting local communities
- Financial support to develop urban biodiversity projects and improve green spaces, particularly in deprived neighbourhoods. If local communities play an active part in developing projects like these, they can help to promote local economic development, have positive health outcomes and develop lasting community pride

Why should we develop greenspaces in our towns?

Developing green space is an important part of environmental justice.

Green spaces can:

- create greener, healthier places for people to live;
- make these areas more attractive and distinctive;
- encourage outdoor play and exercise;
- help to improve air quality; and
- contribute towards more sustainable settlements.

A new initiative was launched in Scotland in 2001 by Scottish National Heritage (SNH), in partnership with others. This set up a network of partners (including local councils) across Scotland's urban environment and a new trust called Greenspace Scotland.

The trust will encourage the partners and local communities to take an interest in green space and other aspects of quality of life and well-being. For more information, log on to www.greenspacescotland.org.uk

Money is also available for these kinds of projects through the SNH and Forward Scotland *Fresh Futures* scheme, 'Transforming Your Space', which is backed by National Lottery funding. For more information, log on to www.forward-scotland.org.uk

Scotland's forests offer substantial health and recreational benefits to residents and tourists alike. Public access is promoted for this purpose and the range of facilities available in forest areas is growing steadily. It ranges from car parking, chalet accommodation, walking, horse riding and mountain biking trails, and a wide range of ranger services for recreational and educational purposes. Access is free of charge and the forests are integrally supportive of the rural tourist industry in most parts of Scotland.

An environmental health surveillance system for Scotland

Work has now started on developing an Environmental Health Surveillance System for Scotland (EHS3). This brings together a range of organisations to collect, hold and, as appropriate, analyse and interpret environmental and health data throughout Scotland.

EHS3 will gather data on:

- environmental parameters, for example air quality, water quality and noise; and
- health and social factors, for example morbidity and homelessness.

This will help establish what physical environmental factors impact on human health, and identify clear links if possible. The project could be expanded to include data from local councils on housing, and possibly fixed pollution sources like landfill sites and incinerators.

Most people now agree that the physical environment is a factor in many health problems. Both long term (chronic) and short-term (acute) exposure to different aspects of the physical environment may have public health significance. EHS3 will help policy makers understand how poor environmental conditions can affect people's health and will be crucial as Scotland develops its environmental justice policy.

An important characteristic of EHS3 will be its ability to be flexible, as it can change its approach as circumstances. This in turn will influence policy and actions to promote improved environmental standards and public health.

SEPA is a major contributor to the EHS3 project and provides it with data on environmental monitoring. There are several potential benefits in taking part in this project, as it will improve our understanding of the impact of environmental pollution and support SEPA's regulatory duties.

More than 6,000 BT people are now full-time home-based workers, experiencing personal benefits to their lifestyle while reducing the environmental impact of their travel to and from work.

A study into BT's flexi-working programme found:

- savings of 424,000 miles a week of car travel and 190,000 miles a week of rail travel; and
- employees were spending more time with their families and less time commuting.

And a similar study into BT's own use of audio and video conferencing found annual savings of 54,000 tonnes of CO₂ and €13.6 million.

This year BT is engaged in an EU-sponsored study, SUSTEL, assessing the economic, social and environmental aspects of teleworking.

A great use for SUDS

A new system for dealing with urban drainage helps to:

- protect the aquatic environment from pollution;
- reduce the risk of flooding;
- promote biodiversity; and
- create natural habitat and public amenity.

SISTech has been working with stakeholders in a major development in Edinburgh to promote the use of SUDS – Sustainable Urban Drainage Systems.

This has also been uniquely linked with proposals to open up to daylight existing watercourses in the area by removing concrete culverts and channels.

Communities and their environments

Communities have an important link with their natural environment. The Highlands and Island Enterprise (HIE) supports a wide range of community-based sustainable development activities. These include:

- community renewables projects;
- recycling;
- community management of woodlands;
- an investigation into community ownership of fishing quotas to ensure sustainable local management of fisheries resources; and

- supporting local food initiatives to link local production to local consumption such as farmers markets.

During 2002-03, HIE has supported 116 community environmental projects including biodiversity projects, countryside access, woodland and fishery management plans and recycling of white-goods and agricultural waste.

Degrees of Success

The University of the Highlands (UHI) offers HNC/D Biomedical Sciences, General Sciences and Life Sciences Courses. These are nationally recognised qualifications in an important and growing field.

The Healthy Environment Network

The Healthy Environment Network was set up in 2002 by the Public Health Institute of Scotland (PHIS).

It brings together a wide range of professionals and organisations interested in many aspects of health and the environment. The group aims to allow interested parties to get involved in specific issues proposed by members.

The Scottish Environment Protection Agency (SEPA) hopes to benefit from the group. It already has a health task group which develops networks in environment and health and co-ordinates advice on human health issues.

It's keen for the Healthy Environment Network to review its actions on the environment and on health issues. It can benefit from the views of experts working in other areas which affect its own work and take forward priority issues which cut across all their areas of expertise.

SEPA is now establishing links with organisations such as the Scottish Centre for Infection and Environmental Health (SCIEH), PHIS and Health Boards, particularly the Consultants in Public Health.

Natural Resources & Waste

Scotland's record on reducing, recycling, composting and recovering waste is not good. In fact, it's even been suggested that we have one of the worst waste management records in the EU. However, the Scottish Executive has put in place significant plans to move to a more sustainable waste system.

This section covers:

- Scotland's National Waste Strategy
- How sustainable waste management is being promoted
- UK environmental taxes
- How organisations are working towards sustainable waste management

Scotland's National Waste Strategy

Scotland's National Waste Strategy sets out how we aim to achieve sustainable waste management at a national and local level.

As part of the strategy, Scotland now has 11 Area Waste Plans (AWPs). These will influence all the decisions we take in the future about waste management. Over €320 million has been allocated over three years so local councils can put these plans into action.

In 2003, the Scottish Executive and SEPA published The National Waste Plan. It summarises the 11 Area Waste Plans to show how waste in Scotland will be handled over the next 2 decades, with increases in recycling and recovery and a reduction in landfilling.

Implementing the National Waste Plan will:

- provide segregated kerbside collections across Scotland (to over 90% of households by 2020);
- stop the growth of the municipal waste we produce by 2010;
- recycle and compost 25% of our municipal waste by 2006, and 55% by 2020 (35% recycling and 20% composting);
- recover energy from 14% of municipal waste;
- reduce the amount of municipal waste we put to landfill from around 90% to 30%;
- provide advice to businesses on how they can cut down on the amount of waste they produce; and
- develop markets for recycled material to help recycling become viable and reduce costs.

The National Plan also sets out how commercial and industrial waste is to be tackled.

The Scottish Executive is already working with the Business Council for Sustainable Development to

Case Studies

Scotch Whisky Association

Packaging:

This is among the most readily perceived environmental impacts of the Scotch Whisky Industry, both in its use of raw materials and when the consumers dispose of it. Both areas of potential impact are managed intensively, with companies seeking ways to minimise and recycle packaging. For example, a lightweight glass was developed in 1995, which uses less raw materials. This technology is now an industry standard and has been widely adopted within the UK spirits industry. It has won the Queen's Award for Environmental Achievement. Companies are increasingly using packaging that wraps around bottles while they are on the bottling line, removing the need for cardboard internal dividers. These and other environmental initiatives have, since 1990, resulted in a weight reduction of almost 30% for an average case of 12 x 70cl bottles – down from 6.5kg to 4.9kg. Other initiatives include moving from acid etching on bottles to a more environmentally-friendly, organic coating, and moving from solvent-based print coatings to water-based ones.

Water:

Several grain distilleries have reduced their use of fresh water by 30% by recycling process liquor (spent wash). 90% of the water used by a malt distillery is for cooling. It is borrowed and returned, normally to the same water course a short distance from the abstraction, without a reduction in quality.

By-products:

Cereal and liquid residues left after fermentation and distillation are reused where possible and are sold as animal feeds, for example draff, dark grains and pot ale syrup. At some larger distilleries, CO₂ is recovered from fermentation. It is then purified and sold for use in, for example, soft drinks, fire extinguishers and the food industry.

Land:

Many distilleries have reduced their peat consumption by re-arranging the peat in kilns for more effective use. In one case, it was reduced by around 70%.

Wood:

Wood is sourced from the drinks industries in Europe or the USA and recycled by distillers for use as Scotch Whisky maturation casks. Most companies have their casks reconditioned by a variety of techniques - including de-char/re-char. This greatly extends the cask's useful life as a maturation vessel. New ways of conditioning casks to improve cask management and extend cask life are constantly being sought.

SISTech

SISTech's research has been concentrating on actions with deal minimising and reducing waste. The company has been working on a government sponsored project to investigate the feasibility of the reuse of primary packaging in the UK. It has also carried out work on assessing the attitudes of residents in Edinburgh towards recycling and promoting sustainable waste management in the construction industry. SISTech is currently conducting research into the possible implications of the WEEE Directive for companies disposing of surplus IT equipment. This research will lead to the production of a best-practice guide for computer waste disposal for larger organisations across the central Scotland area.

UK Offshore Operators Association (UKOOA)

Maximising the recovery of oil and gas reserves on the UK Continental Shelf is important.

To date about 31 billion barrels of oil equivalent (boe) have been produced and it is estimated that remaining reserves are 24-32 billion boe.

Harvesting these reserves will be important for UK energy requirements but the industry is also conscious that it must make prudent use of resources in its operations and by developing and applying new technologies, as well as making the best use of existing infrastructure so that its footprint on the marine environment can be minimised.

Industry data indicates an increase in the quantity of general waste from offshore operations returned to shore. This is partly because the new Offshore Chemicals Regulations are in force and chemicals held offshore are being returned to shore for disposal.

develop the Scottish Industrial Symbiosis Programme. This will help Scottish businesses and industry to become more efficient and competitive.

But it is not just business and industry that will benefit. Better use of resources and reducing waste will also help to protect our environment. Economic growth is essential if we are to maintain our quality of life, but it cannot continue to come at the expense of our environment. The Scottish Industrial Symbiosis Programme puts the principles of sustainable development into practice for the benefit of both our economy and the environment.

How sustainable waste management is being promoted

Scotland aims to improve the sustainable use of natural resources by:

- cutting down on waste that's produced in Scotland;
- recovering its value; and
- making sure it is disposed of in the best way.

The concept of Best Practicable Environmental Option and Life Cycle Assessment is used to inform which waste management options should be used in each area of Scotland and report on the considerable environmental benefits that will arise from this radical reassessment of Scotland's waste management needs.

- Taking a proactive role in encouraging businesses, organisations and people to generate less waste

A number of waste minimisation programmes offer advice to different sectors on how to reduce the amount of raw materials, water and energy they use.

These include Envirowise (which provides waste minimisation advice and assessments to businesses), a SEPA waste minimisation programme to increase awareness of waste minimisation issues and several local and regional initiatives such as the Business Environmental Partnership and Business Wins.

Environmental Taxes

The UK has taxes which shift the tax burden from 'environmental goods' to 'environmental bads'. These taxes are revenue-neutral. This typically happens by reducing taxes on labour, for example on National Insurance contributions.

The Landfill Tax and the Aggregates Levy, both return some of the money raised to specific funds that can be used to further the objectives of the tax. So money from the Landfill Tax is used to:

- encourage more sustainable waste management, to reduce our dependency on landfill sites; or

- help compensate communities through the Landfill Tax Credit Scheme for the environmental impact of living near a landfill site.

Similarly, some of the money raised through the Aggregates Levy is returned to local communities through the Community Environmental Renewal Grant Scheme. This promotes environmental projects in areas affected by quarrying and associated activities.

Scottish Enterprise
The Dunbartonshire Environmental Management Initiative aims to integrate environmental improvements into mainstream business development.

The benefits to companies include:

- savings on company turnover of 1% by using resources more efficiently;
- reducing the amount of solid waste going to landfill by 5.7%;
- reducing the amount of water used by 20.5%;
- reducing the amount of energy used by 6.9%;
- total savings to date of €319,000 a year with a further €125,000 identified;
- total potential savings of €636,000 a year over the next few years.

The programme is managed by Scottish Enterprise Dunbartonshire with assistance from Scottish Environmental Protection Agency (SEPA), Scottish Energy Efficiency Office, Envirowise, Scottish Water and Forward Scotland.

Nine textile companies have taken part in an environmental management demonstration project. This has helped them set up procedures for managing their environmental activities as they prepare for current and future legislation and work towards ISO 14001 accreditation. Five companies are currently working towards ISO 14001 through this Programme, put in place by Scottish Textiles, in association with Scottish Enterprise and other government agencies.

The **Lean Management Thinking Programme** aims to promote and support business improvement activities for manufacturers and tradable services in the West of Scotland. The impact of the programme has generated site wide activity across the majority of the participating companies. Process mapping has been carried out in all the presenting companies and 100's of projects have been initiated ranging from minor "quick wins" to detailed improvement projects. A significant development has been the culture benefits of training workforces to carry out their own improvements. Companies taking part in the programme were able to quickly identify efficiency savings to the tune of €1,405,000. Every company taking part has expressed a desire to be included in next years programme, and all will almost certainly put new teams on, many expressing a desire to put more than one team on the programme.

Stephen McPhee, MD of the Stephen McPhee Group stated that:

"We have already started to implement the project that our first 'Lean Management Team' has developed. The implementation of the project is in an early stage but it has sent ripples throughout the company and already people are thinking more about their job and how it could be done better. It is extremely gratifying as managers to see people using their initiative and becoming more involved in their relevant jobs."

Renfrewshire Economic Environmental Forum (REEF) is a virtual, not-for-profit club for local business and communities. The club is shares best practice and technology to bring improved productivity and environmental excellence with to members. Members can contribute to discussions online, get advice, updates on their specific markets and develop robust environmental management systems that drive down costs. The project has been set up with the support from Scottish Enterprise Renfrewshire.

Small, eco-friendly business units in Forfar, Angus. Scottish Enterprise Tayside has been working in conjunction with a developer in a pilot project on sustainable development. The project involved the creation of seven industrial units which used renewable wood from Scottish forests and other recycled materials during their construction. Although the project has not yet been evaluated it is anticipated that it will reap long term operational benefits including savings in energy.

Scottish Water

Water is a natural resource and Scottish Water collects, treats and returns it safely to the environment. As with all water utilities, it loses some through leaks in the system. One of the schemes it has set up is the Integrated Network Management Systems (INMS). This identifies where resources need to be targeted to manage leakage and improve the infrastructure, for example by renewing the mains. This system will be rolled out all over Scotland over the next few years.

BT Group

BT recognises that the way it produces and disposes of the waste from its operations is an important environmental issue. It produced more than 90,000 tonnes of waste in 2001/2002. To maintain its ISO 14001 certification, it must have efficient, effective and environmentally friendly waste management systems in place.

BT has broken down the types of waste it generates into three distinct categories:

- Category 1 - waste that does not present a danger of environmental pollution.
- Category 2 - waste that is not toxic or hazardous in unmodified form, but which has the potential to become so if not treated properly on disposal.
- Category 3 - waste that is inherently toxic or hazardous and requires the most careful handling at all stages of the disposal process.

Detailed instructions on how to deal with these three categories of waste are set out in the BT Waste Guide document, available to all BT people.

In the last year for example, it has reduced the amount of waste it sent to landfill by 22.5 % and increased the total amount of waste recycled to 21%. The income from its recycling was €5.9 million which, together with its landfill tax savings, reduced the costs of disposing of waste by over 50%.

UHI Millennium Institute

UHI has a wide range of courses available in Forestry, Countryside Management, Agriculture, Fish Farm Production Management and Gamekeeping. The BSc Forestry and Conservation Degree provide all the skills and knowledge needed to become a competent forest manager, capable of providing professional advice to the land-based sector. It includes environmental impact assessment, woodland ecology, conservation, forest management and silviculture, as well as developing the personal and professional capabilities to function more effectively in the workplace.

ScottishPower

Power station ash is one of ScottishPower's most abundant waste products. The firm has a joint venture company, ScotAsh, with Lafarge Cement to sell ash, which can be used in building products and to stabilise waste. Recycling ash in this way also reduces the need to quarry primary aggregates (newly-extracted sand and stones).

ScottishPower also owns and operates Europe's largest sewage sludge drying centre, at Uddingston near Glasgow, on behalf of Scottish Water. The dry, lightweight and smell-free granules that the plant produces have a similar energy value to brown coal, or lignite. Longannet power station in Fife recovers energy from the waste, producing electricity and creating value from Glasgow's sewage.

Landscapes

This section summarises some of the work that various bodies have been doing since 1997 to further the goals of sustainable development as they affect Scotland's landscape. In particular it considers:

- Landscape character assessments
- National scenic areas
- National parks
- Changes to the planning system
- The Strategic Environmental Assessment Directive
- Sustainable urban drainage systems

Landscape Character Assessments

Since 1997 Scottish Natural (SNH) has worked with local councils to publish 32 Landscape Character Assessments (LCAs), covering all of Scotland.

In 2002 SNH published guidance about how to use and apply LCAs. SNH is following this up by publishing an overview of the LCA programme.

LCAs allow everyone involved in influencing the landscape to take a consistent approach to how they describe landscapes. This in turn helps to influence decisions that affect landscapes, such as land use, planning and development.

It is difficult to attach values to landscapes, so decisions that affect landscapes tend to undervalue their importance. This is a complex debate that hasn't so far been aired widely in Scotland. SNH's policy statement on landscapes – due in 2003-04 – will explore in more details the relationship between LCA and values.

SNH has also issued guidance about natural heritage sensitivities on where to put wind farms (you can find more details in the chapter on Climate Change); open-cast coal working, telecommunication masts and the design of fish farms.

National Scenic Areas

Since 1997 SHN has also reviewed its series of National Scenic Areas (NSAs). These identify areas that are outstanding for their scenic quality.

The main conclusion was to improve how to care for the 40 existing areas, which cover just over 12% of Scotland, before considering expanding the series.

National Scenic Areas are spread from the Solway Firth in the south west to Shetland in the far north east. Most are in the mountains and islands along the west coast. SNH has worked with Dumfries and Galloway Council and Highland Council on two pilot projects to prepare management strategies for four

Case Studies

BT Group

BT's products, services and operations affect its customers' surroundings. Disturbing a local environment can take various forms, from the visual intrusion of telephone wires to disruption from building work.

BT'S network planning rules and procurement policies cover these issues, and include ways for customers to communicate with the company about them.

It has 28 million customer lines, around four million telegraph poles, millions of manhole covers, thousands of roadside cabinets, 24 tunnels running through cities and hundreds of radio stations.

This scale of equipment has a potential impact on the environment - on the countryside, on skylines and cityscapes – that's of concern to all BT's stakeholders.

Compromises have to be made on environmental grounds in many cases. For example, replacing overhead wires with buried underground cable has positive and negative environmental impacts.

- Underground cables may have less visual impact, but burying wires underground uses much more energy and materials
- Poles are made from timber grown in managed forests and can be regarded as a renewable resource; underground cables need plastic ducts, concrete and metal manhole covers, which are made from non-renewable sources

Recognising there's no "one size fits all" solution for all situations, BT works with customers to balance visual impact, cost and resource use.

Managing landscape change

Scottish Natural Heritage (SNH) joined up with two local councils to develop National Scenic Area management strategies.

The aim was to improve how areas are designated as National Scenic Areas (NSAs). A project with Dumfries and Galloway Council was asked to produce a strategy for each of the three NSAs on the Solway Firth during 2001/02.

An NSA officer, working with local communities and other interested parties, ran a series of events, meetings and workshops to generate interest in, and debate about:

- what's important in these landscapes;
- what issues affect them; and
- what to do about these issues.

Together with a technical assessment of the landscape character, the findings have helped produce the three strategies, which:

- identify the key scenic qualities for which the NSA has been designated;
- identify what forces for change affect the landscape;
- promote a vision and objectives that safeguard the NSA's landscape; and
- set out an action plan to achieve this.

The Council has adopted the three strategies as supplementary planning guidance. They form the basis of various funding bids to put the range of actions into practice.

ScottishPower

ScottishPower sponsors countryside rangers at several of its sites.

These include ash lagoons near Longannet and Cockenzie power stations, where dumping ash over the years has created new land.

The ash has been landscaped and is now managed for nature conservation. The lagoons near Longannet form part of a Site of Special Scientific Interest, while the site near Cockenzie is one of Scotland's top locations for sighting rare birds.

At the firm's Beinn and Tuirc wind farm in Kintyre, a full-time countryside ranger led a drive to regenerate 450 hectares of moorland.

ScottishPower also sponsors a Scottish Wildlife Trust seasonal ranger at its Lanark hydro-electric scheme.

The firm also supports fish studies to monitor how its operations are affecting fish in the Firth of Forth and at its hydro-electric scheme in Galloway.

And it works closely with the Royal Society for the Protection of Birds (RSPB) to develop its wind farms and control water levels at its Galloway scheme during the nesting season.

NSAs. The Case Study box in this section has more details about these.

National parks

Also since 1997, Scotland has designated its first two national parks: Loch Lomond and The Trossachs National Park, and The Cairngorms National Park. The latter is the largest national park in the UK.

National parks are being established to protect and enhance some of the very best of Scotland's natural and cultural heritage. They are special places, which many people value for:

- their natural beauty and amenity;
- the outstanding opportunities they provide for open-air recreation; and
- the wider contribution they make to Scotland's national identity.

Developed to meet Scottish needs, national parks will also play an important role in sustaining local communities and championing sustainable development in these areas. A notable feature of the laws that set them up is that no two parks need be alike: the way each one achieves the aims of national parks can be tailored to suit local needs.

Changes to the planning system

During 2001-02 the Scottish Executive consulted on a major overhaul of the planning system. The new administration set up after the May elections to the Scottish Parliament is due to announce the results of this.

Initial indications from this highlight how important it is to draw up national policy through statements of Scottish Planning Policy (formerly national Planning Policy Guidance Notes) and the planning advice notes that are linked to the planning policy.

Proposals for a National Planning Framework are another important development. The framework provides a Scotland-wide view that will help devise strategies in areas such as transport, waste, energy, resource use, and regenerating rural and urban areas.

The Strategic Environmental Assessment Directive

The Government must implement this directive by July 2004. Under it, plans and programmes such as development plans must include an assessment of their impact on the environment.

Work is currently under way to develop regulations for this directive and the types of plans and programmes it will cover. Many people involved in landscape issues hope the directive will complement:

- existing procedures to assess the impact of projects; and
- the wider commitment by Scottish Ministers to assessing how policies affect society and the environment.

Sustainable urban drainage systems

Sustainable urban drainage systems (SUDS) are a way of treating drainage in built-up areas – drainage that pollutes nearly 500km of Scotland's rivers.

It's possible to design SUDS to fit into their environmental setting, adding considerably to local amenity, to local biodiversity, or to both of these. Implementing SUDS also contributes to sustainable development in Scotland.

Thanks partly to SEPA, SUDS forms part of the recent Water Environment and Water Services (Scotland) Act 2003.

Accessing & Enjoying the Environment

Since February 2003, people in Scotland have a legal right of access to the countryside that's comparable to land access in the Scandinavian tradition.

This section outlines the law behind this new right, the Land Reform (Scotland) Act. It also sets out:

- Why an Access Code is so important
- Other measures helping people enjoy Scotland's countryside

The Land Reform (Scotland) Act

The Scottish Executive is preparing to implement this new law, which gives people the right to have access to land:

- for recreational activities;
- to cross land; and
- for some educational activities.

The act also gives a right to access to people doing commercial activities, provided the activities are covered by the basic rights listed above.

Local councils must uphold access rights access and create local access forums. These give advice on how to implement the new law and resolve problems. Councils also have new management powers, which include providing paths throughout their area.

Although land access isn't an issue for the EU to rule on, it is very important in Scotland. It may also generate interest elsewhere in the EU as a way of encouraging people to understanding, be aware of and enjoy the environment.

Why an Access Code is so important

The access rights that the Land Reform Act gives people will not take effect until the Scottish Parliament agrees the Access Code.

This is because the act gives people a right of "responsible" access, and the Access Code must define what "responsible" means in this context. In addition, "irresponsible" behaviour could become evidence in a court case.

The new act also seeks to balance the interests of the people it gives new rights to, and the interests of landowners. Each is responsible for taking into account the other's rights and interests. The Access Code will set out this responsibility.

SNH is consulting on the Access Code and, provided the Parliament reaches agreement, it could come into effect in 2004.

Case Studies

BT Group

Problems and compromises relating to telecommunications equipment can spoil people's enjoyment of the natural environment. (Refer to 'Case Studies' in the section on Landscapes).

Complaints about BT wires and cables range from visual intrusion to birds sitting on wires creating noise and mess. 2000/2001 saw a significant increase in the number of environmental complaints about wires and cables. Most of these are about cables left lying on the ground and BT is drawing up plans to tackle these.

Poles sometimes need replaced. When it draws up new routes for poles, BT considers the environment, paying particular attention in areas of outstanding natural beauty, listed buildings and in other protected areas.

Radio communication that relies on line-of-sight signals between overhead masts, is an important part of BT's main network. The BT group has around 300 radio stations throughout the UK. The radio network provides a rapid response to traffic congestion in emergencies; and it links cellular radio sites to fixed sites. Radio is also used in areas where the terrain is particularly difficult, such as mountains. In the Scottish Highlands, for example, much of the main network traffic is carried by radio.

BT is experimenting with satellite links. But masts will remain a feature of landscapes for some time yet.

Federation of Small Business (FSB)

The FSB works to highlight the importance of the rural economy. It also lobbies for better communications and public transport; and more support for rural businesses. These in turn allow rural communities to remain viable and provide services so that others can enjoy the local environment.

Scottish Water

Scottish Water encourages access at its managed sites. For example, in the Pentland Hills outside Edinburgh, it works with the Pentland Hills Ranger Service to manage access to its seven reservoirs.

A survey found that over 250,000 people visited Scottish Water sites in the Pentland Hills in 1999. Loch Katrine, in the Trossachs, has around 180,000 visitors a year. This site is an important local tourist attraction making a significant contribution to the local economy.

Scottish Water also works with Fife Ranger Service, who provide a service for visitors to reservoirs in the Lomond Hills.

Tourism & Environment Forum (TEF)

TEF has worked with partners on the Caithness Wildlife Tourism project (led by SNH) to help visitors to the area get the most out of the environment and wildlife.

Falkirk Council

Callendar Wood covers 94 hectares, surrounded by the built-up areas of Falkirk and its satellite communities.

It has around 14 ha of mature native broad-leaves, mostly oak and birch. There are also mature scots pine, beech, sycamore and yew.

The wood is an important feature of the local landscape, and has significant historic, natural heritage and recreational value. It has an extensive network of tracks and permissive paths – ones that the landowner allows the public to use.

However until recently, the wood's potential was restricted by its status as commercial woodland in private ownership.

A partnership has been set up involving Forest Enterprise, Scottish Natural Heritage, Falkirk Council, Central Scotland Countryside Trust and Falkirk Environment Trust. The partners developed a project to improve the woodland's condition and remove threats to its future.

The project has agreed a management plan that will monitor and evaluate the project. The management plan will be reviewed every five years in consultation with the Callendar Woods Group and local community representatives. Several tasks have been successfully completed. Community consultation and participation have helped make the project a success.

Work has included:

- creating sign-posted cycle ways, bridleways and pathways;
- making the perimeter wall safe;
- putting up signs and information boards; and

Other measures helping people enjoy Scotland's countryside

"Paths for All" and "Paths for Health" are two schemes designed to encourage people to enjoy countryside areas near where they live. Paths for All is creating a network of local paths, and Paths for Health promotes walking as a healthy activity. Both highlight that it's important to have an overall strategy when planning networks of paths.

These and similar schemes are likely to remain important to, for example, making access easier in and around towns.

Scotland also has an important network of long distance routes covering more than over 700km. These include:

- The Southern Uplands Way (Portpatrick to Cockburnspath)
- The Speyside Way (Buckie to Aviemore)
- The West Highland Way (Glasgow to Fort William).
- The Great Glen Way (opened in 2002, it extends the West Highland Way from Fort William to Inverness)

- setting up a Friends of Callendar Wood group.

Those helping with the work include people on the Government's 'New Deal' scheme for job seekers; local community volunteers; local contractors and the Callendar Woods Group. The site was used for the national launch of Forest Enterprise's 'Community Engagement' policy. The project cost €268,000, funded by the partners, along with lottery funding as part of the Millennium Forest for Scotland.

East Ayrshire Woodlands: Environmental Restoration Works in East Ayrshire Social Inclusion area

This is a partnership project, led by East Ayrshire Council with input from Scottish Enterprise Ayrshire, Scottish Natural Heritage, the Forestry Commission, Scottish Wildlife Trust, the Farming and Wildlife Advisory Group, and private estates.

It transforms land left derelict by coal mining into semi-natural habitat. As soil it uses a mixture of mining waste and processed sewage waste. Experts at Auchencruive College provide advice, and the procedures follow good practice from European case studies. European funds contribute towards the costs of capital works and for trainees working on the project. The trainees gain qualifications in forestry management. Forestry will help create jobs as nearby plantations come to maturity over the next few years.

The local community's views are taken on board about landscaping, paths and about details of woodland.

An employee manages community consultation and ensures plenty of paths are available for different groups. These range from long-distance walkers to people with restricted mobility. Local community groups are also involved in managing improved sites.

The project has meant:

- jobs for trainees
- better land
- less waste going to landfill
- new and managed woodland

UHI Millennium Institute

The Highlands and Islands have an astonishing range of environmental habitats and Sites of Special Scientific Interest (SSSIs).

The Institute's Faculty of Environmental and Natural Systems Sciences aims to introduce

students to the region's 'natural laboratory' and to develop well-rounded graduates with a mature understanding of the environmental pressure and scientific opportunities that the region offers. Many courses are underpinned by research, especially in marine and environmental sciences.

The 2001 Research Assessment Exercise (RAE) judged the UHI submission to be "of national excellence" in this area.

Other courses provide vocational qualifications that are specifically linked to the needs and potential of the Highlands & Islands.

Scottish Borders Tourism Access Development Programme

This project exploits the environmental attractions of the Scottish Borders, expanding and promoting countryside access for visitors.

Surveys have consistently shown that the natural environment is the area's main tourist attraction. Most visitors do some walking or other activity during a visit. Tourism is also central to the area's economy.

Since 1995 there's been a working partnership between Scottish Enterprise Borders, Scottish Borders Council, Scottish Natural Heritage and the Scottish Borders Tourist Board, supported by European funds. They've developed both local and long-distance walking routes. They also launched the Scottish Borders Walking Festival, aimed at extending the local tourist season. This project has progressed from developing new routes to completing links and improving information boards, signs and the quality of existing routes.

Other organisations, including Forest Enterprise, Paths for All and the Borders Cycling and Equestrian Forums are being brought into the partnership.

Representatives of the partnership form the project's steering group. The combination of experts on the group ensures that tourists enjoy the best experience, while avoiding sensitive nature conservation sites.

The project is expected to upgrade 1,000 km of paths throughout the Scottish Borders. There are also plans to make sure the paths are maintained.

Much of the work will be undertaken as a training exercise, involving Scottish Enterprise Borders' environmental action team.

Raising Awareness & Environmental Education

It's vital that people, businesses and organisations understand why it's important to protect the environment – and how they can help.

This section covers:

- The Scottish Executive's "Do a Little, Change a Lot" campaign
- Scotland's Eco Schools programme
- Community Learning Strategies
- The ecological footprint in Scotland
- What SEPA is doing to raise awareness of environmental issues
- The Forest Education Initiative

"Do a little, change a lot" campaign

In 2000, a majority of people surveyed by the Scottish Executive thought they should be doing something to protect the environment, but were not sure what they could do.

So in 2001, the Scottish Executive launched a campaign called "Do a little, change a lot". It aimed to raise awareness of the environment and tell people what they could do in their daily life to improve it, for example, by:

- reducing the energy they use by walking short distances rather than using the car;
- switching off TVs at the socket rather than leaving them on standby; and
- not over-filling the kettle.

Television and press adverts were used and subsequent research has shown they were effective in starting to change attitudes.

To complement this campaign, the Scottish Executive developed an interactive website for Scottish schoolchildren aimed at raising awareness of climate change.

The second phase of the campaign focused on waste and resource use, with continuing work on climate change. Partnerships with retailers and local councils were developed to complement the campaign. And a more local approach to press advertising and public relations was developed to support the core messages.

The challenge for the future is to make individuals more aware of environmental issues and then take action.

Case Studies

SISTech

SISTech is the project manager for the Scottish Universities' Network for Sustainability (SUNS). This programme brings academic institutions together to address sustainable development within teaching, research and institutional performance. SUNS is hosting an event in June 2003 to examine how the curriculum within Higher Education can be adapted to include sustainable development. SISTech is advising the Institute of Civil Engineers (ICE) on sustainable development and is working with Heriot Watt University to develop a sustainable development policy. SISTech has produced information websites Sustainable Information Scotland. They raise awareness of sustainability issues in Scotland and are aimed at general public and businesses. It has also organised awareness raising sessions for businesses on a variety of issues.

Tourism & Environment Forum (TEF)

TEF produced an awareness raising leaflet called Wild Scotland to distribute to overseas tour operators, and direct to visitors through Tourist Information Centres in London and across Scotland. TEF also hosted the first Wild Scotland stand at Scotland Expo – an annual travel trade fair that sells Scotland to tour operators from around the world. TEF has been working with the Scottish Tourist Guides Association to ensure that Scotland's tour guides are aware of sustainable tourism issues.

UK Offshore Operators Association (UKOOA)

The oil and gas industry is committed to raising awareness about the environment with its workforce. In the UKOOA Sustainable Development Strategy, published in 2001, the industry agreed to set up a framework to identify and address environmental awareness and training needs to ensure all employees achieved a basic understanding of environmental issues. The industry agreed to meet regularly with non-government organisations to discuss its environmental practices.

The Federation of Small Businesses (FSB)

The FSB provides information on environmental issues affecting small businesses through its national and regional publications and through its website.

VIBES

The VIBES (Vision in Business for the Environment of Scotland) Awards recognise and reward good environmental practice that enhances business competitiveness. It captures good practice throughout Scotland, across all company sizes and many sectors. The scheme encourages sustainable business practices through encouraging new environmental initiatives, raising awareness of best practice within the workplace, promoting effective resource use, recycling and pollution minimisation.

VIBES is a partnership between the Business & Environment Network (BEN), Forward Scotland, Scottish Enterprise, Highlands and Islands Enterprise, Scottish Executive, Scottish Environment Link, the Scottish Environment Protection Agency and Scottish Water. Information and entry details are all available on its website www.vibes.org.uk.

Scottish Natural Heritage (SNH)

Training workshops for front line tourism staff about the wildlife of their area and how visitors can engage with it have been organised by SNH, working with Highlands and Islands Enterprise and Tourist Board Training. The workshops, supported by money from the European Structure Fund, are expected to be attended by over 200 people. Plans are now in place for more. SNH is also developing its National Nature Reserves as part of its work to raise awareness of Scotland's wildlife at these key locations.

Stow College, Glasgow

Stow College, working with the Strathclyde European Partnership, wanted to find ways of making sustainability an integral part of their further education curriculum to meet the requirements of European funding. After a successful pilot project, in partnership with others, a new unit 'Promoting Sustainability: the role of the individual' was developed. The Scottish Qualifications Authority approved the unit and the college was accredited to deliver it. The course content emphasised the links between environmental, social and economic issues. A second unit has now been introduced called 'Promoting Sustainability: the Role of Organisations' Students from the first unit were involved in the discussions at the draft stage, and the majority expressed interest in studying the new unit. Although some courses lent themselves to a sustainable development focus more easily than others, it was possible to introduce the subject, to some extent, into all courses.

Scotland's Eco Schools programme

The Eco Schools programme was introduced to the UK in 1995 as the result of a government commitment after the Earth Summit in 1992.

With the support from the European Commission, the programme gives young people in Scotland the opportunity to:

- learn about sustainable development;
- put it into practice in their local environment; and
- share their ideas and experiences with other young people around the world.

8,000 schools are now participating in 23 countries throughout Europe. The programme:

- Encourages pupils to become active citizens in their communities
- Gives schools the chance to work at their own pace and choose their own priorities
- Promotes schools and local councils working together
- Provides schools with the opportunity to link with schools around the world who share a common concern for the environment
- Recognises success and maintains momentum through a series of awards
- Develops links with the community

545 schools are now registered in Scotland and 37 have achieved a Green Flag Award, the highest award in the programme.

One of the performance measures for councils is the number or percentage of schools in their area that are taking part in the Eco Schools award or a similar accredited environmental award.

In schools, a scheme called Ground for Learning provides grants to enhance the school environment (including species and habitat diversity). This encourages pupils and teachers to plan, develop, and manage the resource and use it for learning. Increasingly this approach is linked to the wider Eco-Schools initiative.

Community Learning Strategies

All local councils now have to prepare a Community Learning Strategy. These will help to put in place the government policies for active citizenship, social inclusion, and citizenship education at a local level. They also have the potential to promote the role of the natural heritage and environment in general. Community learning and development are important way for communities to increase their skills, confidence, networks and resources so they can tackle problems and grasp opportunities.

The ecological footprint in Scotland

The ecological footprint is currently being tested in a Scotland-wide study. It is an important way to help raise people's awareness of the impact of their buying decisions and lifestyle choices.

The technique calculates the amount of land required by a community for its food, energy use, transport, waste management, and compares this with similar requirements of other communities (including communities in other countries).

It's a powerful way to illustrate how resource-intensive a community is, and whether its use of resources is fair. Like other developed countries, Scotland uses around three-times its fair share of the earth's resources.

What SEPA is doing to raise awareness of environmental issues

SEPA recognises that it's essential for the public, local councils and industry to get involved in protecting and improving Scotland's environment. SEPA's work in education includes:

- Talks, presentations and lectures on a range of environmental topics to schools, colleges and universities, community groups, interest groups, businesses and international visitors.
- Becoming a partner in the first ever Scottish schools ecological design awards.
- Producing a newsletter called 'SEPA View' which covers a wide range of environmental issues with both a Scottish and international flavour.
- Participation in a variety of national networks, such as Education 21 Scotland, and international networks, such as Co-operation in Environmental Education in Europe as a means of improving quality in co-ordination and co-operation between key players.
- Facilitating access for the public and educators to a wide range of environmental education held by SEPA.
- Planning and co-ordinating a national action plan for education and awareness in support of the National Waste Strategy, including the Waste Aware Scotland Campaign, aimed at shifting Scotland's waste and resource use culture in the direction of more sustainable practices.

But it also promotes positive environmental practices, for example:

- The Scottish oil care campaign, which was developed in partnership with the former Water Authorities (before Scottish Water was set up).

As a result of the project, it's now possible to recommend how sustainable development could be more widely integrated into Further Education. The European Structural Funds played a key role in this work.

E-Learning to promote sustainable development

Stow recognised that the two sustainability units and the two energy efficiency units should reach as wide an audience as possible and has now applied for EU funding to allow the units to be delivered as supported or distance learning.

BT Group

BT's innovative Better World Internet site (www.bt.com/betterworld) covers its impacts, programmes and policies across a range of social, environmental and economic issues. It contains a information, performance data and targeted improvements. In April 2002 the Better World site was named joint winner of the first ACCA Sustainability Reporting Award. And in 2003, it received two awards: one for sustainability reporting and one for electronic media reporting. This site hosts e-mail and live on-line debates on issues of interest and concern to BT's stakeholders. BT also seeks specialist opinions on social and environmental policy through its Stakeholder Advisory Panel and Social and Environmental Report Independent Advisory Panel. The company also has an annual environmental communications plan. A short intranet-based environmental awareness training package outlines:

- the key global issues facing business and industry today;
- how BT addresses those issues by effective environmental management; and
- how BT employees can contribute to its overall performance.

Scottish Water

Sustainable development is one of the themes of Scottish Water's education strategy. A new education website is being commissioned and will be available later this year. This will be aimed at pupils aged 5-14 and will be web-based so it can be regularly updated.

UHI Millennium Institute

The public and private sectors increasingly require staff trained to deal with environmental and sustainability issues. Industry, consultancies and private companies also demand graduates with environmental management skills in many disciplines to make sure they meet legal standards.

UHI's BSc (Hons) Sustainable Development and Environmental Management, based at Orkney College, enables students to thoroughly understand how to encourage business and community growth in a fragile region without damaging the environment.

It leads to a multidisciplinary qualification with expertise in conservation biology, social and economic development, resource management and environmental impact assessment. Throughout the course, sustainability at island and global is included using case studies from the Highlands & Islands as an ideal model for international sustainable development.

A joint project involving Scotland, Norway, Sweden and Finland highlights the important role of learning centres in sustaining local communities.

The "Community Learning Networks in Northern Periphery Areas" project, set out to develop best practice guidelines to run community learning networks in remote areas with small populations.

UHI Millennium Institute's partners were:

- Norbottens Kooperativa Utvecklingscentrum (NKU) and Lapplands Kommunalforbund (Sweden)
- Bodø Regional University (Norway)
- Rovaniemi Polytecnic (Finland)

The partners carried out an audit of education in their areas, chose centres of learning and carried out detailed case studies of these. Although the study found huge variations in how each of the countries approach learning in remote communities, it also provided useful information on running learning centres.

The study concluded that community learning centres and networks can play an important role in combating problems that pose huge problems – such as depopulation and isolation – in Northern periphery areas. It also found that a strong educational base is essential.

Along with features found in traditional centres of learning, for example information and communications technology (ICT), they centres also need:

- support for students and staff;
- money;
- good-quality courses and tutoring;
- training for learning centre managers; and
- a network of people and groups to share experience and opportunities.

This campaign promotes good practice in keeping, using and disposing of oil, which is a common surface water pollutant. The campaign recently introduced the Yellow Fish project. This helps community groups identify surface water drains which discharge to water courses in a bid to discourage irresponsible disposal of waste oil and the resulting water pollution.

- A range of guidance material to encourage farmers to adopt good practice to protect and enhance the environment.

It includes leaflets, a handbook on farming and river management and the Scottish Agricultural Pollution Group Review.

The Pollution Prevention Guidelines cover topics like oil tanks, kennels and catteries, pesticides and educational establishments.

- SEPA also publishes a series of State of the Environment Reports, on the key media areas SEPA covers: water, soil and air.
- A Waste Awareness Strategy Team (WASTeS)

This team makes sure that all the education, awareness and promotion elements of the National Waste Strategy are put into action effectively.

The Forest Education Initiative

The Forest Education Initiative aims to increase the awareness of the forest industries amongst schools and the wider public. Sponsored by industry and government, the Initiative has formed cluster groups throughout the country each conducting activities to bring the community into closer contact with forests and processing industry through events, visits, and developing new educational materials, and encouraging greater coverage of these materials within the school curriculum.

Working in Partnership

Putting sustainable development into practice is not just the work of government. This section gives a flavour of the many organisations that are working together. In particular it outlines partnership working by:

- The Scottish Executive
- The Scottish Enterprise network
- The Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH)
- Other organisations

The Scottish Executive

For the Scottish Executive, partnership working means refining the vision set out in its sustainable development paper: Meeting the Needs ... Priorities, Actions and Targets for Sustainable Development in Scotland. And it means working towards achieving longer-term ambitions.

To encourage as many groups as possible to take part, the Executive set up the Sustainable Development Forum. Its remit is "to provide a focus for Scottish thinking and action on sustainable development". More than 140 people from all over Scotland and all walks of life have taken part. A steering group made up of members from various sectors is now taking the forum forward.

In February 2003 the Scottish Executive published the National Waste Plan. This sets the direction for the Executive's policies on sustainable waste management to 2020. It pulls together 11 Area Waste Plans and is the result of painstaking work in partnership with the Scottish Environment Protection Agency, local authorities and other stakeholders.

The Scottish Executive enabled a Scottish Civic Delegation to attend the World Summit on Sustainable Development in Johannesburg. The aim was to make sure that the views of Scottish society were aired and that Scotland's participation would result in benefits at home. Delegates were chosen to achieve a balance of established leaders and new people showing particular commitment and dynamism. They represented:

- non-governmental organisations (NGOs) involved in the environment and in social justice;
- local authorities;
- children;
- businesses; and
- organisations involved in overseas developments.

Case Studies

Strathclyde European Partnership (SEP Ltd)

SEP works on behalf of the Strathclyde European Partnership to implement structural funds programmes in western Scotland.

Partnership working underpins the way all Scotland's Structural Funds Programmes are administered, and is one of the most important factors in how they're delivered.

The system has been refined so that decisions are taken by consensus, by groups made up of representatives from partner organisations.

This model has been very helpful in promoting environmental issues. For the 2000-06 programme all committees and decision-making groups have been widened to include environmental experts. They are not always from environmental agencies, but also work on environmental issues in universities, for training organisations, and in local economic development agencies.

No project has ever been rejected or delayed solely on environmental grounds. However a significant number have had grant conditions covering the environmental aspects of their work. In these cases, SEP has been available to provide staff to help improve the projects.

All members of decision-making bodies have received training on sustainable development and other themes that run through all projects and programmes (so-called "horizontal" themes). Training is also part of induction for new members. This helps ensure consistency of approach across all bodies and projects.

Tourism & Environment Forum (TEF)

Partnership working is central to TEF's success. A good example has been the Dolphin Space programme in the Moray Firth.

The programme brings together operators of dolphin-watching tourist activities, Scottish Natural Heritage (SNH) and the local tourist board to promote, agree and police acceptable behaviour.

UK Offshore Operators Association (UKOOA)

Oil and gas companies are committed to working in partnership with all sectors of the industry, with NGOs and stakeholders such as local communities, fishermen and other users of the sea.

Case studies of this commitment in practice include:

Fishsafe:

This is a computer-based early warning system developed by UKOOA for the fishing industry to warn of underwater equipment and pipelines.

Earth Science Education Unit:

UKOOA is funding this unit at Keele University between 2002 and 2006. It's helping teachers and pupils use earth science to develop critical thinking. In turn this encourages them to understand better how the earth works and how future generations could manage it better. UKOOA also contributes to the Scottish Earth Science Education Forum.

Stakeholder Consultation:

UKOOA held its first full stakeholder consultation in November 2002 with some 50 attendees from a wide variety of interested parties. UKOOA is planning more meetings.

The Federation of Small Businesses (FSB)

FSB Scotland is working in partnership with the Scottish Energy Efficiency Office at the Scottish Executive to develop a toolkit for small and medium-sized enterprises (SMEs) on environmental issues.

The toolkit will raise awareness of:

- laws and how to meet them;
- bottom-line business benefits and opportunities; and
- how to get help from relevant agencies.

Envirowise and other agencies in related areas are also taking part in this project.

BT Group

In 2000 BT hosted a CEO forum at the World Telecommunications Congress. As a result some of the group's biggest suppliers signed a communiqué on sustainable development.

BT also led the Business in the Community's Impact on Society task force that produced the report "Winning with Integrity".

Protecting Scotland's biodiversity is an integral element of the Scottish Executive's vision for a sustainable Scotland. To help in this, the Executive set up the Scottish Biodiversity Forum. This brings together people from government, SNH, SEPA, local councils, voluntary bodies, farming, fishing, forestry, business and science. In February 2003 the forum presented Ministers with a Biodiversity Strategy for Scotland.

The Scottish Executive also continues to develop its relationship with the UK Government and the UK Sustainable Development Commission. Again, this is about working together to find the best ways to respond to Scottish sustainable development challenges.

The Scottish Enterprise Network

The Scottish Enterprise Network has formed relationships with many national and local agencies and organisations. This helps to identify emerging trends and issues; and to share learning.

Partnership working also helps identify common issues where groups can work together; for example, to improve indicators and targets. Community planning will play an increasingly important role by providing an overall strategy that helps partner groups focus on economic, social and environmental issues.

Important issues for the Scottish Enterprise network and its partners include:

- helping businesses respond to environmental laws and use resources more efficiently;
- identifying and exploiting business opportunities in green technologies;
- working towards common goals and considering all the issues that sustainable development entails; and
- making progress towards the indicators set out in the Scottish Executive's publication: Meeting the Needs ... Priorities, Actions and Targets for Sustainable Development in Scotland.

The Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH)

In 2001 SEPA and SNH jointly funded the post of European Partnerships Officer for the period December 2001 to March 2004. The officer's remit covers all of Scotland and involves helping with and giving advice on how to make sustainable development an integral part of the five Scottish Structural Funds programme.

Four inter-linked ways of doing this are:

- Making assessments of sustainable development part of the mid-term evaluations of Scotland's European programmes

- Analysing national policy and giving the results to interested groups
- Making sure people and organisations have what they need to achieve their own needs (capacity building); and raising awareness of European partnerships in Scotland
- Co-ordinating input by SEPA and SNH when structural funds are being implemented

Much of the current work focuses on helping implement sustainable development recommendations arising from mid-term evaluations of the programmes.

Other organisations

One pioneering partnership in Scotland is UHI Millennium Institute. This is a learning network based on a partnership of 15 colleges and research institutions, plus two associated institutions. Many of these operate local learning centres, enabling students to join UHI courses without making long daily journeys.

Each college and research institution has its own distinctive character and local strengths, which means students can share the educational advantages of a much larger institution while benefiting from the personal attention and care only a smaller college can give.

UHI also works very closely with other agencies across the Highlands and Islands, particularly Highlands and Islands Enterprise, to tackle the challenges of providing education in a large, rural, sparsely-populated area.

Elsewhere in Scotland, many groups have sprung up in the last five or so years to work on common problems and issues.

An SNH programme, Focus on Firths, led to partnerships such as the Moray Firth Partnership. These are developing joint approaches to managing important coastal areas. They have also helped to defuse a number of potential areas of conflict between development and the environment. The Scottish Coastal Forum has successfully applied a similar approach to Scotland-wide issues.

The Access Forum was set up to help shape how the Land Reform (Scotland) Act would give people access rights to the countryside. The Biodiversity Forum had a similar role in biodiversity.

The group chairs the Global e-Sustainability Initiative (www.gesi.org) and has taken part in the Digital Futures project, Digital Europe and the Sustel European project on the sustainability of teleworking.

Renfrewshire Council

The Council's Sustainable Communities Programme helps communities work with other organisations to identify, prioritise, develop, fund and manage local projects.

The programme supports projects that help regenerate communities by:

- improving how local environments are managed;
- helping communities take the lead in their own social and economic renewal; and
- raising awareness of sustainable development issues
- promote urban regeneration.

It encourages communities to develop ways of achieving social, economic and environmental sustainability; and focuses on priorities that the communities identify.

The programme's aims, results and targets include measures such as:

- new jobs
- training places aimed at helping communities take the lead in their own renewal;
- intermediate labour market placements (schemes offering training and paid work experience)
- residents joining community forums
- new community groups
- private sector funding
- food or gardening projects
- recycling projects
- children visiting country parks

The measures also take account of the Scottish Executive's social justice targets.

Communities are encouraged to focus on projects that:

- have relatively low costs but high impacts
- have links to other projects and funding sources
- also lead to jobs and training

Projects bring additionality because they are set up to be self-reliant as paid staff withdraw. They include lunch clubs, play areas, community learning facilities, after-school groups, community gardens and play schemes. Communities also regularly organise litter clearing and set up recycling facilities.

The Sustainable Communities Programme covers all 11 Social Inclusion Partnership areas in Renfrewshire and has a staff of five. It is funded by the Paisley Partnership Social Inclusion Programme (SIP), the European Regional Development Fund and Forward Scotland and through the Landfill Tax.

The programme will continue for at least another three years.

Fife Environmental Network (FEN)

The Fife Community Plan, published in June 2000, embraces the ethos and actions of Local Agenda 21. It also states how local agencies intend working together to improve the quality of life for everyone in Fife.

One of six themes the plan identifies is to safeguard and improve the environment. There's been a lot of progress but also a feeling that there should also be an overall strategy.

This led to the Fife Environmental Network (FEN) Co-ordination Group, set up in October 2001. It was asked to produce a strategy, with actions, that would be a focus for environmental effort in Fife.

The group's members are:

- Communities Scotland
- Fife Biodiversity Group
- Fife Council
- NHS Fife
- Friends of the Earth Scotland
- Historic Scotland
- Scottish Enterprise Fife
- Scottish Environment Protection Agency
- Scottish Natural Heritage
- Scottish Water

Many others, including voluntary organisations, community councils and utilities, have helped draw up the strategy in workshops and brainstorming sessions.

The process of forming the FEN partnership and of developing an environmental strategy for Fife has been under way since October 2001.

The Scottish Sustainable Development Forum was created in 2002, with the support of Scottish Ministers, to stimulate progress on sustainable development issues across all parts of Scottish society.

Increasingly, organisations are encouraging staff to go on secondment and placement to help organisations learn new skills. This is particularly so where relations between organisations have been strained or poor. Staff exchanges are an important way to develop understanding, respect and a more fruitful relationship. There are examples in the public sector in Scotland, between Scotland and the EU, and, more rarely, between business and the public sector.

In autumn 2002 a consultation exercise sought public views about a draft version of the strategy.

The co-ordination group took feedback from this to finalise the strategy and draw up options for further action and for other partnerships.

Called 'Take a Pride in Fife', launched in April 2003, features of the strategy include:

- 149 actions that everyone involved have signed up to
- strong links with the Fife Community Plan
- support from a broad range of partners, who have also signed up to the strategy's main themes

The strategy is based on the following themes:

- community learning and development
- energy
- local environments
- natural heritage
- pollution
- transportation
- wise resource use and waste minimisation

Over 50 projects showing how communities in Fife are translating sustainable development into practical action were on show during Green Week in June 2003.

The aim is to help people understand the theory of sustainable development and to encourage and inspire them to develop their own projects.

Midlothian Council

The Council has developed what it calls a "visioning process".

This began by getting representatives from 10 agencies to consider how the local communities should develop.

As part of this the Council developed "visioning exercises". This included finding new methods of partnership working and getting communities involved in making decisions about sustainability.

Community planning in Midlothian involves partnership working with many agencies in local government, economic regeneration, social inclusion – and involving local communities. These groups work together on local activities.

The visioning exercise aims to establish a vision of priorities for the area that everyone involves shares. This will help develop the Community Plan.

The Midlothian community planning partners proposed a draft Midlothian Vision 2020 that had two main principles, quality of life, and sustainability.

The main ways of taking these forward are through education, health, safety, economic prosperity, social inclusion, cultural identity and protecting the environment.

Partnership then widened, with some 300 community groups throughout Midlothian asked to take part. There was more community consultation through the Midlothian Citizens' Panel. Midlothian Council is also developing its own community forums.

During the visioning process, the initial draft of a 20-year vision was agreed in late 2000. A final vision was complete the following year. Long-term monitoring and evaluation will use local community sustainability indicators.

ScottishPower

In 2001 ScottishPower teamed up with the Energy Saving Trust and the Soyal Society for the Prevention of Accidents to launch a new accreditation scheme for house builders. This is aimed at builders who build into homes environmental or safety features that go beyond normal standards.

ScottishPower's also works to reduce fuel poverty by working in partnership with organisations such as Energy Action Scotland and the Energy Action Grants Association.

It is also involved in emerging technologies, such as a household solar power trial with Berwickshire Housing Association.

Future Challenges

Challenges facing Scotland over the coming years include climate change; the marine environment (including the depletion of fish stocks); tourism impacts; waste minimisation; urban deprivation and inequalities; and globalisation of economies.

If we want to meet the environmental challenges of sustainable development in Scotland, we will need to take action in the areas that follow:

Climate Change

We will need to:

- Extend policies that mitigate climate change, including expanding the amount and diversity of renewable energy supply, to tackle energy use in general and, in particular, its increasing use in transport and homes
- Apply to land use and land management policies the results of monitoring and modelling of how climate change is affecting species and habitats
- Seek to assist and encourage Scottish business to improve energy efficiency
- Ensure costs and benefits of energy policy are distributed equally. This includes environmental objectives other than reducing greenhouse gas emissions

Nature & Biodiversity

We will need to:

- Implement the Scottish Biodiversity Strategy by:
 - identifying and monitoring appropriate indicators;
 - integrating biodiversity targets into sectoral policy;
 - making the public more aware of, and involved, in biodiversity; and
 - identifying practical ways of incorporating ecosystem approaches into action for biodiversity.
- Manage protected sites and how these integrate into the countryside; for example by promoting habitat networks and catchment management approaches and getting enough support to appropriately manage semi-natural habitats in the countryside
- Integrate best environmental practice into land management to stop the decline in species currently thought of as common
- Continue to integrate biodiversity objectives into the way we manage the marine environment and developing appropriate models of spatial planning in the marine environment
- Implement the UK-led policy on non-native species, focussing on measures to stop potentially invasive species from getting into Scotland; and, if any do get in, early action to stop them spreading
- Maintain data sets to underpin management and indicators, by continuing to survey, including promotion of recording by volunteers; and making these datasets widely accessible through the National Biodiversity Network
- Continue to emphasise reform of the Common Agricultural policy and to develop Land Management Contracts in Scotland

- Ensure regional, national and EU indicators are consistent, to make comparisons easier and make sure associated policies respond to local needs. We also need more development on indicators of less quantifiable aspects of sustainable development, such as landscape quality, quality of life, and sense of place

Environment, Health & Quality of Life

We will need to:

- Implement the Water Framework directive
- Improve understanding of the links between weather and bathing water quality
- Ensure consistent good air quality

Natural Resources & Waste

We will need to:

- Use UK tax money to maximise the environmental benefits in line with the objectives of the taxes; and, where possible, in line with the Scottish Biodiversity Strategy
- Deal with new challenges associated with other forms of pollution tax, for example emission trading schemes
- Develop infrastructure for waste management both for households and business
- Improve the resource efficiency of Scottish business

Landscapes

We will need to:

- Encourage a debate about the value to be attached to landscapes to help resolve potential conflicts with development, especially on-shore wind farms
- Secure improved management of the National Scenic Area series and consider how the series might be expanded
- Develop and implement the National Planning Framework and the documents associated with it

Accessing & Enjoying the Environment

We will need to:

- Promote awareness of the Access Code and encourage responsible access to Scotland's countryside

Raising Awareness & Environmental Education

We will need to:

- Make sure environmental issues are an integral part of Community Learning Plans
- Embed sustainability into the curriculum

- Encourage the link between raising awareness of – and changing behaviour in favour of – Scotland's environment, and the environment in other parts of the world affected by the decisions made by people in Scotland

Working in Partnership

We will need to:

- Develop new ways of breaking down barriers between working with communities and work patterns that are considered traditional. This might include more flexible out-of-office working hours, employing 'community agents', or working through others. A particular challenge is likely to be how this can happen without conflicting with personal life, including family commitments
- Make better use of secondments, placements, and joint-funding of posts across the public sector and between the public and private sectors
- Ensure cross-cutting themes such as the environment are fully integrated in policies and approaches that are traditionally more focused on social and economic interests

To be effective, we must get communities involved so they can be engaged by the issues, not detached from them. We can do this by addressing popular concerns, while also taking a lead on some of the "hard issues" yet to come.

As stated at the outset of this paper, we would like to learn from other countries that have successfully addressed the challenges we now face. We would also be interested in learning from others about the following areas:

- How do we better embed the principle of sustainable development into our skills and learning activities in terms of content and delivery?
 - Is the answer mainly around an element of environmental content and access / travel issues or is there a bigger opportunity?
- How do other economic development agencies capture their contribution to sustainable development through indicators and targets?
 - How do you keep such indicators and targets simple, useful and relevant?
- What approaches have been most successful in making the transition from sustainable development pilot projects to sustainable development as part of business as usual?
- What work has been done to identify the current scale of the remanufacturing industry in member states and to address legislative and other markets?

Scotland has certainly achieved a lot in the last six years. And over the next five years it will have to deal with many challenges which it does not face in isolation.

If you would like to learn more about any of the case studies or would like to share your experiences with us, please contact:

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Annexes

GLOSSARY

6EAP	6 th Environment Action Programme
AWPs	Area Waste Plans
BAPs	Biodiversity Action Plans
BIA	BioIndustry Association Scotland
BRE	Building Research Establishment
COSLA	Convention of Scottish Local Authorities
DEFRA	Department of Environment, Food and Rural Affairs
DTI	Department of Trade and Industry
EHS3	Environmental Health Surveillance System for Scotland
ERDF	European Regional Development Fund
ESEC	East of Scotland European Consortium
ESEP	East of Scotland European Partnership
ESEU	Earth Science Education Unit
ESF	European Social Fund
ETNO	European Telecoms Networks Operators
EUSDS	European Union Strategy for Sustainable Development
FE	Further Education
FSB	Federation of Small Businesses
GTBS	Green Tourism Business Scheme
HEI	Habitat Enhancement Initiative
HIE	Highlands & Islands Enterprise
HNC	Higher National Certificate
HSE	Health and Safety Executive
ICE	Institute of Civil Engineers
INMS	Integrated Network Management Systems
LA21	Local Agenda 21
LBAPs	Local Biodiversity Action Plans
LCA	Landscape Character Assessments
MONARCH	Modelling Natural Resources Responses to Climate Change
NDPBs	Non departmental public agencies
REEF	Renfrewshire Economic Environmental Forum
SBG	Scottish Biodiversity Group
SCRI	Scottish Community Renewables Initiative
SEEO	Scottish Energy Efficiency Office
SEN	Scottish Enterprise Network
SEP	Strathclyde European Partnership
SEPA	Scottish Environment Protection Agency
SISTech	Scottish Institute for Sustainable Technology
SNH	Scottish Natural Heritage
SNIFFER	Scotland & Northern Ireland Forum for Environmental Research
SQA	Scottish Qualifications Authority
SSN	Sustainable Scotland Network
SSSI	Sites of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems
SWA	Scotch Whisky Association
TEF	Tourism & Environment Forum
UKETS	UK Emissions Trading Scheme
UKOOA	UK Offshore Operators Association
VIBES	Vision in Business for the Environment of Scotland
VS	VisitScotland
WASTeS	Waste Awareness Strategy Team
WEEE	Waste Electrical and Electronic Equipment

MEMBERS' CONTRIBUTIONS

BIOINDUSTRY ASSOCIATION (BIA) SCOTLAND

BioIndustry Association (BIA) Scotland is addressing the challenge of sustainable development by networking with key players in both the private and public sectors, and offering a range of services to its members. Many of the problems associated with the sustainability of a wide range of manufacturing production and service industries can be solved biotechnologically, thereby lessening environmental footprints, aiding competitiveness and profitability, avoiding expensive litigation, and becoming part of the knowledge economy.

Contact:

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<http://www.bioindustry.org/index.shtml>

Novel approaches are now becoming available to lessen environmentally undesirable effects of wastes such as solvents, fats, waxes, greases, oils, starches, proteins, pharmaceutical and other bio-active contaminants, heavy metals, carcasses, sewage, crop residues etc. In many instances, valuable by-products can be recovered. Various modern diagnostic technologies have particular utility in detecting and quantifying contaminants. Other technologies are being deployed in the remediation of land, water and the atmosphere – key areas of development which will help meet national and international targets for improving the environment.

Biotechnology is playing a pivotal role through genomics, in understanding biodiversity, gene flow, and resilience of ecosystems, as well as providing the tools for propagation of high-health-status plants and livestock.

On 21 January this year, BIA Scotland, in concert with DTI-BIOWISE and the Scottish Executive Enterprise and Lifelong Learning Department, organised the ENABLE Conference in Edinburgh to consider biotechnologically based processes, products and new solutions involved in manufacturing industries. The meeting attracted over 80 participants from the food, remediation, biosensor, and industrial biocleaning industries as well as from academia. A new ENABLE Conference will be held in the near future.

Agricultural biotechnology has the potential to produce new healthcare products from livestock and novel crops for energy generation, food and non-food products such as packaging, and for bioremediation. New forms of diagnostics are being developed for pathogens, soil health, ecosystem management, and contaminants. Enzymological methods are being used to degrade damaging wastes and effluents from manufacturing industry, to treat hides in leather manufacture, and to treat wastes from food-processing factories.

Economic sustainability in terms of competitive advantage is readily available in biotechnology through robust intellectual property protection, aided by recent announcements from the European Union.

Scotland has a high profile in sustainability-relevant biotechnology. Several of the Scottish universities and research institutes have state-of-the-art facilities and world-renowned scientists and technologists. Many of the new Scottish biotechnology companies have sustainability at their heart. After all, sustainability and wellbeing of the population and workforces is a special feature of the pharmaceutical and healthcare thrusts of BIA member organisations.

Sustainability should be assisted by the development of the Intermediary Technology Institutes (ITIs) announced by Scottish Enterprise, with biotechnology highly pertinent to both the Life Sciences and Energy ITIs.

BT Group

BT is one of Europe's leading providers of telecommunications services. Its principal activities include local, national and international telecommunications services, higher-value broadband and internet products and services, and IT solutions. In the UK, BT serves over 21 million corporate and residential customers with more than 28 million exchange lines, as well as providing network services to other licensed operators.

We believe that our approach to Sustainable Development is a critical contributor to the commercial success of the company and in particular that it helps us deliver against the company's commercial strategy.

Our objectives have been to: -

- Identify key Sustainable Development (SD) risks and opportunities for BT
- Set out how these risks and opportunities are managed for future growth
- Illustrate how BT's Sustainable Development performance adds to shareholder value
- Make a real contribution to society and the environment

In doing so we have established quantitative data that has helped build a business case for acting in a more sustainable manner. In particular we have identified that our SD performance is: -

- an essential component of customer and employee satisfaction
- crucial in retaining and growing markets
- an important differentiator when bidding for new business
- critical to reputational risks and opportunities

In light of this we strongly believe that sustainable development needs to be embedded in the core of the company operations and not seen as an issue managed by a specialist HQ team. To help achieve this, our innovative 'Health Check' process ensures that the company's key commercial programmes have addressed all critical sustainability issues.

It's important to recognise that sustainability issues are not exclusively about risk minimisation. For example, our environmental programme has delivered approximately €840 million of savings over 10 years and at the same time dramatically reduced our wastes and emissions to air of greenhouse gases, ozone-depleters etc. and enhanced our corporate reputation.

Future Challenges

We believe that BT has significant competitive advantage over other industry players because of its intention to play a leadership role on sustainable development. This judgement is supported by BT's ranking as the number one telecommunications company in the Dow Jones Sustainability Index for both 2002 and 2003. This index is widely recognised as the most rigorous, comprehensive and thorough benchmarking exercise amongst the CSR rating agencies. The premise of the index is that leading companies create long-term shareholder value by embracing opportunities and managing risks from economic, environmental and social developments.

Large customers, including the public sector, are increasingly attaching social and environmental criteria to tenders and seeking information on BT's performance in these areas.

At the present time our sustainable development credentials actively support bids and contracts with a value in excess of €630 million over the life of the contracts. Whilst price and quality remain the key determining factors, we expect this trend to grow.

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CONVENTION OF SCOTTISH LOCAL AUTHORITIES

COSLA is the representative organisation of local government in Scotland. Local authorities deliver a wide range of environmental services and COSLA works to ensure that they have the funding, the workforces and the national legislation which they need for this.

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Climate Change

COSLA has produced the "Scottish Local Authorities Sustainable Energy Strategy" which identifies the potential role for local authorities in addressing climate change and the support which they now require from the Scottish Executive.

Nature and Biodiversity

COSLA has contributed to the Scottish Biodiversity Forum and to the development of Local Biodiversity Action Planning by local authorities. COSLA will be involved in any legislation for nature conservation and biodiversity in the next Scottish Parliament.

Environment, Health and Quality of Life

COSLA has now secured recognition of the essential role of local authorities in delivering health improvement for citizens and communities.

Natural Resources & Waste

COSLA has worked with the Scottish Executive and SEPA to ensure that the central role of local authorities in sustainable waste management is now reflected in national and area waste planning.

Accessing & Enjoying the Environment

COSLA has worked to ensure that the Land Reform Act now delivers a public right of responsible access to land in Scotland.

Raising Awareness and Environmental Education

COSLA has supported local authorities in developing their Local Agenda 21 strategies for sustainable development and in integrating LA21 with the overarching Community Plan for each local authority area.

Working in Partnership

COSLA could not be effective without close partnership working with the Scottish Executive and national organisations. COSLA has ensured that the Local Government in Scotland Act 2003 gives local authorities the leading role in the Community Planning partnerships which bring together the major organisations which affect local social, economic and environmental well-being.

Future Challenges

Future challenges for COSLA will be influenced by the policy and legislative priorities of the Scottish Parliament. The second four year session of the Scottish Parliament has just begun following elections on the 1st May, 2003.

EAST OF SCOTLAND EUROPEAN CONSORTIUM

In Spring 1997, I wrote a paper for Scotland Europa updating progress on sustainable development in Scotland from a local government perspective. This updated paper now revisits progress in Scotland, considers how the aspirations set out in the earlier paper have been met and where we go following the Johannesburg conference in September 2002.

In this short paper written for ESEC I would like to highlight local government's contribution to that progress, show where progress has been made, and try to explain where less has happened than might have been expected. In doing this I would like to take as a basis some of the 'challenges' I identified in my 1997 paper for Scotland Europa.

The purpose of this paper is to note the progress on sustainable development within Scottish local government since 1997. The paper provides a brief context for this, how the challenges of 1997 have been addressed, what barriers still remain to progress and what challenges we still face.

'Sustainable development' was defined in 1987 by the Brundtland Commission (1) as:

"Development that meets the needs of today without compromising the ability of future generations to meet their needs."

Popular concern for the quality of the environment has been matched broadly by action at all levels of government address emerging environmental problems. At a global level, 1972 saw the first conference on the environment in Stockholm and since that time there have been a number of major initiatives. The European Union (and previously the European Community) has been a strong driver for environmental protection and improvement, with six 'Environment Action Programmes' and hundreds of individual pieces of environmental legislation.

Since at least the late 1980s, however, there has been recognition that environmental legislation in itself is not sufficient to address environmental problems. There is now a need to address social and economic issues from which the environmental problems may stem. To this end, Flavin (2) noted that:

"Today we live in a world that is economically richer than could have been hoped for a half-century ago, but one that is ecologically poorer than hardly anyone could have imagined." (2)

Sustainable development seeks to address this apparent paradox, by moving away from a 'single issue' approach to a more 'joined up' one, and by recognising that the needs for development must be balanced with the capacity of the planet to absorb it. This was the central theme for the 1992 United Nations Conference on Environment and Development (UNCED or the Rio Summit) and since then this more sophisticated 'sustainable development' approach has been adopted at all levels from global to local. Sustainable development strategies have been published at European, national and Scottish levels. At local government level, Local Agenda 21 emerged following the 1992 Rio Summit, as a commitment to promote sustainable development at community level.

Since 1997, the landscape for sustainable development in Scotland has changed. 1997 marked the year of the first Labour victory in the General Election. It saw the first moves towards a Scottish Parliament and

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on the environmental stage, it saw the less-than-conclusive 'Rio +5' Conference in New York; and the much more conclusive Kyoto Protocol on climate change.

In Scottish local government there has been a gradual move across a number of fronts to embed sustainable development into activities. Progress has been varied and faster in some areas and organisations than others. After a slower start compared to the experience in England and more notably Wales, there has now been encouraging progress in Scotland, with a genuine move on the part of the Scottish Executive to supply vital leadership on this issue, particularly in the past twelve months.

Explanations and expositions of these points have been made elsewhere and with greater knowledge of these matters than my own (3). These reported at best patchy progress in the run-up to the 2002 Johannesburg Summit. Consequently these aren't discussed here, but the appropriate papers are listed for reference. Similarly, the broad currents and eddies of global and European trends (4) and policy which determine global sustainability aren't considered in any detail except to draw some general conclusions.

Rising global consumption fuelled by the power of advertising do much to explain continued unsustainable trends. The scope for Scottish local government to 'buck the trend' is very limited. There is clearly a need to develop a less wasteful society, making smarter use of resources. Attitude changes are needed to enable this and while local government, as government nearest the people has a part to play, the reality is that big government and big business must create the conditions for a more sustainable society.

Scottish local government's contribution to progress on sustainability

Local government in Scotland continues to have a central role in promoting sustainable development at local level. Areas of influence include local transport, land-use planning, waste collection and disposal, economic development, tourism, housing and community safety. With the emergence of the Local Government Act and specifically Community Planning legislation, local government will arguably have an even greater ability to 'broker' sustainability initiatives with a range of local partners.

Chapter 28 of Agenda 21 (5) noted that:

"Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and co-operation of local authorities will be a determining factor in fulfilling its objectives" and that

"As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development."

With this 'vital role', how far then, since 1997, has Scottish local government got involved in implementing solutions to problems at local level?

There is encouraging evidence that there has been much sustainable development activity within Scottish local government since 1997. This is reflected in the publications by the Scottish Office (now Scottish Executive) (6); by COSLA (7); and in more recent case studies appended to this report. What is less clear is whether this has been matched by councils delivering all services in a more sustainable manner. 'Big spender' services may still be left out of the sustainability equation. It is important that services like education, health, social services, protective services and economic development make a significant contribution to sustainability. Perhaps the Scottish Executive's emphasis on 'improving quality of life for people now and in the future' makes the relevance of sustainable development to these services much clearer.

In my earlier paper, several challenges were identified for local government. The first was to get all Scottish local authorities involved. At that time, Prime Minister Tony Blair made a commitment that all local authorities should have a Local Agenda 21 strategy in place by the year 2000. By the end of 2000, Scottish local government had achieved that target, thanks in part to the promotional efforts of the Convention of Scottish Local Authorities (COSLA), supported by the Scottish Office (later Scottish Executive). Other agencies like Scottish Natural Heritage (SNH) and Scottish Environment Protection Agency (SEPA) also provided further impetus.

The Scottish Local Agenda 21 Co-ordinators Network (now the Sustainable Scotland Network) contributed, by providing support to Local Agenda 21 officers across Scotland. The Network has been a key driver in supporting and progressing sustainable development. Conferences and other events, links to other networks, newsletters and other practical support measures are now being augmented by the

appointment of a full time Network Development post, funded by the Scottish Executive and working within ENCAMS Scotland (formerly Tidy Britain Group).

A second challenge identified was the empowerment of the citizen. Local government is based on a representative rather than participative system. Local Agenda 21, with its requirement to involve and empower people in decision-making affecting their communities, has posed a challenge to elected members. Generally councillors, as elected representatives of their constituency, have shown a marked degree of maturity in accepting an unparalleled degree of citizen involvement in the process of government. Community consultation on a wide range of issues is now common and community planning now formalises the place for the community in developing shared priorities and programmes. Mechanisms like citizen juries, area forums, assemblies and sounding boards are all used to provide a role for the community, from eliciting opinion to providing a seat at the decision-making table.

Given the need to involve the individual citizen in behavioural change, this progress towards active citizenship is an important step forward. The third challenge related to local authorities to reduce the environmental impacts of their own operations, such as employee transport, energy conservation, recycling, purchasing and training. Progress in this area seems to have been more limited. No Scottish local authority has attained environmental accreditation under EMAS (Eco-Management and Audit Scheme) or ISO14001 (although Fife Council did considerable preparatory work on EMAS as well as promoting this within local companies through its 'Green Business Fife' project). One might reasonably ask if councils have been able to adopt new policies on Local Agenda 21 and other sustainable development policies, why has there not been more action in these areas? The explanation may lie with the fact that action requires different processes and drivers. Winning hearts and minds of employees needs time and resources. Changing work practices in reality take much longer than changing policies. The challenge remains there, however. Councils must do more to turn sustainable development rhetoric into real action in areas of activity we control.

New Challenges Ahead

The task for local government in terms of sustainable development remains clear. It was set out in guidance on the Local Agenda 21 process in 1993 (8). What is required is to:

- manage and improve its own environmental performance
- integrate sustainable development aims into its policies and activities
- raise awareness and seek to educate the whole community on sustainable development
- consult and involve all parts of the community in the Local Agenda 21 process
- work in partnership with the stakeholder groups from across the community
- measure, monitor and report on progress towards sustainability in cooperation with partners

If sustainability is viewed as a puzzle (a not unreasonable analogy), then there is a risk that some of the pieces are missing, if not lost. And there is a need to find the missing pieces.

At the same time, there is also a need to address the complexity of the sustainable development process and break this down into 'bite sized pieces' without losing the essential 'joined-up' approach.

On the first point, the 'missing pieces' at present relate to the lack of a co-ordinated Scottish approach on promoting and supporting sustainable development.

However, there are positive signs for greater strategic direction due to an active involvement of Scottish local government. Joint initiatives are currently being developed on a nation-wide scale. In 2002 a joint workplan between COSLA and the four Scottish regional consortia was agreed for a number of key EU policy areas. The East of Scotland European Consortium (ESEC) was given the national lead in the field of EU environmental legislation and has been seeking to raise awareness among key players such as the COSLA Waste Management Task Group and SEPA on the costs impacting on Scottish local government due to the late implementation of EU environmental legislation (particularly in the field of waste-related legislation). Another example for successful partnership working is the recent completion of the National Waste Plan for Scotland (9) and its component Area Waste Plans. The latter example also acts as a guide to what can be achieved when a statutory duty coincides with real commitment within local government.

Leadership on sustainable development remains an issue. Certainly much has been done by the Scottish Executive, especially in the last twelve months to address this. The publication of the 'Meeting the Needs' strategy (10), the 'Building a Sustainable Scotland' spending review 2002 (11) and the 'Indicators of Sustainable Development for Scotland' (12) was matched by a strong commitment to sustainable

development made the First Minister (13). More direction is needed however from the Scottish Parliament which appears to be less in tune with the sustainable development agenda – for example when compared to the Welsh Assembly.

Next, Scottish local government needs to develop guidance and intellectual direction. The Innovation and Development Agency (IDeA) (formerly the Local Government Management Board - LGMB) was significant in promoting and guiding the sustainable development process in Scotland through its Local Agenda 21 guidance. Where this resource is about to be restored in England and Wales (with the establishment of the Local Sustainable Development Unit - LSDU), no comparable body exists for Scotland. The Unit is not funded to support work in Scotland. A similar agency, or at least access to the work of the LSDU, is essential in Scotland if we are not to waste scarce time and resources 'reinventing wheels'.

Lastly, councils must do more to turn sustainable development rhetoric into real action in areas of activity we control, pooling together its own expertise and working across departments. While acknowledging the amount of sustainable development activity, many local government services have yet to embed sustainability into service delivery. Changing work practices in reality take much longer than changing policies. This, however, should not be an excuse for inactivity. Local government must do much more to copy good practice in other sectors. This might include adopting environmental management systems; greening procurement and supply chains; implementing work travel plans; reducing waste; saving energy and raising employee awareness of the issues we face. The statutory requirement to deliver sustainable development as part of Best Value should provide a stimulus to this, but clear guidance is needed from the Scottish Executive, COSLA and other partners if this is to be realised.

On the second matter of managing the complexity, as mentioned above, Michael Jacobs (14) describes this as the "swamp of issues now covered by the sustainability discourse." In reality, there are few activities that cannot be seen as being part of 'sustainable development'. However an appreciation of this complexity has, paradoxically, served to make us feel disempowered. As Jacobs notes, "the breadth now covered by sustainable development has in many senses taken the focus off its core environmental concerns." At local government level, we have to rationalise and simplify sustainable development to areas of, in economics parlance, 'comparative advantage' confident that, with other incentives, drivers and direction, other stakeholders are meeting their part of the bargain.

At the risk of repetition, while the challenge to local government in Scotland remains, the overwhelming need is to provide an overall nurturing environment in which this can grow and prosper.

In drafting this paper the views of the Sustainable Scotland Network have been sought and the views expressed by Network members have been reflected in the paper as far as is practically possible. The paper should not, however, be taken to represent the views of Stirling Council.

Written by Alan Speedie

Edited by Andrea Schwedler

Notes

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2. Christopher Flavin, President, Worldwatch Institute
3. WWF Scotland Report 'Reality Check – a review of Scottish Executive activity on Sustainable Development,' (author Tim Birley); published 11 October 2001
Scottish Civic Forum 'Future Scotland Civic Report', published June 2002 www.civicforum.org.uk
Scottish Environment Link 'Must Try Harder – Scotland's Progress report on sustainability 1999-2002', published June 2002 www.scotlink.org.uk
4. Worldwatch Institute, 'Vital Signs 2001-2002', Earthscan 2001
WWF Scotland 'Living Planet Report 2002' published 9 July 2002 www.wwf.org.uk/about/scotland.asp
5. United Nations 'Agenda 21' published in 1992; text at www.un.org/esa/sustdev/agenda21text.htm
6. Scottish Office 'Changed days: local agenda 21 in Scotland' February 1999
7. Scottish Local Agenda 21 Co-ordinators Network/COSLA 'The Scottish Local Agenda 21 Route Planner', 1999.
8. LGMB, 'Local Agenda 21 – A Step by Step Guide', LGMB 1993
9. Scottish Executive/SEPA 'The National waste Plan 2003', launched February 2003
10. Scottish Executive 'Meeting the Needs – Priorities, Actions and Targets for Sustainable Development in Scotland' April 2002
11. Scottish Executive 'Building a Sustainable Scotland – Sustainable Development and the Spending Review 2002'
12. Scottish Executive 'Indicators of Sustainable Development for Scotland' February 2003
13. Speech by Jack McConnell to ERM Scotland, 28 February 2002
14. Michael Jacobs, 'Environmental Modernisation – The New Labour Agenda' (Fabian Pamphlet 591), The Fabian Society, 1999

FEDERATION OF SMALL BUSINESSES

The Federation of Small Businesses (FSB) is a membership organisation representing the views of approximately 180,000 UK small businesses, 17,000 of which are in Scotland. The FSB seeks to create an environment in which small businesses can prosper. The interface between business and the environment is increasingly important. The FSB seeks to influence environmental policy and regulation in order that environmental objectives are achieved without undermining the viability of small businesses.

Climate change

The FSB has undertaken research that shows the climate change levy is disproportionately burdensome on small businesses and is not resulting in the behavioural changes in energy purchasing, use and efficiency that were anticipated. The FSB seeks the repeal of the climate change levy, but with the levy firmly in place is lobbying for the review of the levy and climate change agreements to identify measures that can assist small businesses contribute to carbon savings without incurring additional costs. Given more Scottish businesses are paying the levy and reporting higher costs more effort needs to be put into promoting low and no cost energy efficiency measures and other means of minimising the impacts of the climate change levy. The FSB has promoted the Action Energy programme amongst its members and is in dialogue with the Carbon Trust to improve the accessibility and take up of the programme within the small business community.

The FSB has actively engaged in the consultation on the Energy White Paper and continues to comment on this evolving policy area.

Future Challenges

Work will continue to lobby for environmental legislation that is pragmatic and sensitive to the small business community. Key areas of interest will remain the implementation of producer responsibility legislation, energy policy and the climate change levy, lobbying on the Environmental Liability Directive and EU Chemicals policy.

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HIGHLANDS & ISLANDS ENTERPRISE

HIE's strategic policy framework '*A Smart Successful Scotland – the Highlands and Islands dimension*' establishes sustainability as a key implementing principle:

"Sustainable development is central to the HIE Network's strategic vision of progress and legacy. Sustainability is not narrowly applied to environmental issues alone but to the key factors that HIE is working to establish for lasting prosperity, wellbeing and quality of life in the Highlands and Islands. Crucial to these will be:

- A sustainable economy which is diverse, adaptable and resilient
- Sustainable businesses with well-developed skills and markets
- Sustainable communities with confidence, capacity and suitable means of economic viability
- Sustainable use of natural resources, including the area's primary products, its natural environment and its cultural assets.

Combined, these will leave an enduring legacy of lasting value for future generations."

The HIE Network recognises the value of the area's natural environment as a resource for generating economic and community development, as key contributor to the area's high quality of life and as a legacy of lasting value for future generations. HIE is currently progressing its environmental sustainability agenda in the following ways:

- development of renewable energy sector within the Highlands and Islands;
- support of businesses to develop economic activity around sustainable products and utilising good sustainability practice; and,
- support of community enterprises in sustainable development e.g. local food supply, recycling and waste management.

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SCOTCH WHISKY ASSOCIATION

Scotch Whisky is a major Scottish-based industry, which is of strategic importance to Scotland and the UK. One of the UK's top five export earning industries, the Scotch Whisky industry (SWI) employs some 11,000 people, many in economically fragile areas of the country.

The natural ingredients essential for the creation of Scotch Whisky – water and cereals, which underpin the quality of the product, tie the industry closely to the environment. Interest in the protection and stewardship of Scotland's environment is therefore a major and continuing priority for the industry.

The SWI takes its environmental responsibilities very seriously and has a long record of good environmental practice, due in part to a long-standing adherence to traditional production methods. Companies include "environmental responsibilities" as part of the induction for new employees and several implement continuous education and training as part of their environmental management systems. Some distilleries hold ISO 14001 environmental management accreditation.

Environmental best practice is widely shared and environment matters are generally dealt with co-operatively through the SWA and its sister organisation the Malt Distillers Association of Scotland (MDAS), and often by direct co-operation between companies.

Where possible the industry works in partnership with government, the Scottish Environment Protection Agency and bodies such as Scottish Natural Heritage to protect the natural environment. The industry fully supports sustainable development and in its own practices applies the principle Reduce Reuse Recycle.

For the future, Scotch Whisky will continue to be an environmentally-responsible industry, with sustainability playing a major part in its operations.

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SCOTTISH ENTERPRISE

Scottish Enterprise is the economic development agency for lowland Scotland, covering 93% of the Scottish population. Our strategy is set out in *A Smart, Successful Scotland: Ambitions for the Enterprise Networks*. It highlights 3 key themes (growing business, global connections and skills and learning) and 5 cross cutting issues (equal opportunities, rural development, social justice, sustainable development and transport).

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Scottish Enterprise consists of Scottish Enterprise and 12 Local Enterprise Companies. Working in partnership with the private and public sectors, we aim to secure the long-term future of the Scottish economy by making our industries more competitive. Our priorities include commercialisation of academic ideas into good business opportunities, e-business, globalisation and economic inclusion. We publish a number of priority targets each year one of which focuses on business benefits from environmental activities.

Funded by the Scottish Executive, SE is headquartered in Glasgow.

Scottish Enterprise recognises that sustainable development is about delivering our economic development role in a way that contributes to social and environmental objectives. Mainstreaming sustainable development is a challenge for the Network but we have some good experience to build on.

The Network Sustainable Development Group was established during 2001 to provide a focus for:

- Sharing the lessons of experience and best practice;
- Building on the principles of sustainable development into our policies and practices;
- Developing a Network response to new initiatives and policy documents such as *The National Waste Plan 2003*.

The Group is particularly important because of the holistic nature of sustainable development and the range of challenges that need to be addressed when considering its application across each of the three strategic themes of *Smart, Successful Scotland*.

Future Challenges

There are a number of areas that will be investigated or delivered during 2003/04 that will more strongly embed sustainable development within the Network's activities. These include:

- lean management and business efficiency initiatives to cover a range of business issues including resource use, waste minimisation and environmental management;
- a business efficiency module for Business Gateway advisors to enhance the information and advice given to businesses;
- mapping the environmental sector in Scotland and the potential for growth;
- capturing and sharing Network good practice in sustainable development across all three themes of *Smart, Successful Scotland* to inform future activities;
- exploring ways to improve our own environmental performance;
- enhanced integration of sustainable development into the Network's strategic thinking;
- Ongoing review of Network targets to both better capture our contribution to sustainable development and to promote more of such activity.

SCOTTISH ENVIRONMENT PROTECTION AGENCY

The Scottish Environment Protection Agency (SEPA) was formed in 1996 under the 1995 Environment Act. SEPA's main aim is to provide an efficient and integrated environmental protection system for Scotland that will both improve the environment and contribute to the Scottish Ministers' goal of sustainable development.

SEPA has a broad range of responsibilities, set out in the 1995 Act, which help to protect Scotland's natural environment. The major strands of SEPA's work include:

- dealing with pollution incidents
- enforcing environmental laws and regulations
- monitoring the condition of the environment
- implementing European Union Directives on behalf of the UK Government
- influencing, educating, advising and informing.

SEPA staff have a wide range of expertise in both scientific and policy disciplines, and the agency encourages partnership with many other organisations to help protect and improve the environment. In addition to its range of regulatory duties, SEPA also seeks to influence other regulatory regimes to ensure environmental protection. For example, SEPA proactively engages with the statutory land use planning system by helping formulate national planning policy, influencing Development Plans prepared by Local Authorities and by providing technical input to decisions on individual applications or planning permission.

One of the major recent changes to SEPA has been the introduction in 2002 of a set of long-term environmental outcomes against which SEPA's performance in protecting and improving the environment can be measured. Until 2002, SEPA's performance was measured by numerical targets for specific activities, such as inspections, enforcement actions, and the number of water samples analysed. The outcomes approach focuses on overall environmental improvement within the broad areas of SEPA's work, with sustainable development as a cross-cutting theme for all of the outcomes. The benefit over the previous approach is that it presents a clearer picture on how well SEPA is fulfilling its role. These outcomes relate not only to the environment but also to SEPA's stakeholders and reflect the Scottish Executive's environmental priorities.

SEPA's outcomes:

- Providing an excellent environmental service for the people of Scotland
- Improving sustainable use of natural resources by minimising waste and ensuring best management of disposal
- Maintaining and restoring all water environments
- Ensuring good air quality
- Promoting respect for the environment in Scotland
- Creating the environmental framework for the economic well being of Scotland
- Ensuring land quality is protected, maintained and restored

Future Challenges

Key opportunities for SEPA to contribute to the shaping of sustainable development policy in Scotland include:

- Enabling more joined up approaches to implementing the range of environmental protection and environmental planning regulations in order to ensure more integrated, better informed and more consistent decision-making which provides effective environmental protection and enhancement.
- Progressing SEPA's engagement in the development of new models of environmental regulation.
- Exploring the potential for voluntary and negotiated agreements in the framework of existing regulation and beyond.
- Addressing the need to incorporate high level sustainable development principles and relevant new policy areas to ensure these are delivered through SEPA's sustainable development work.

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SCOTTISH EXECUTIVE

The Scottish Executive is the devolved government for Scotland, accountable to the Scottish Parliament. Its responsibilities include education, justice, agriculture and fisheries, the environment, enterprise, transport and housing, health, and land use planning. It is responsible for implementing European legislation and international agreements within these devolved areas. The priorities set by the Executive are health, education, crime, jobs and transport, and the cross cutting themes of sustainable development and "Closing the Opportunity Gap".

The Executive was established in 1999, following the first elections to the Scottish Parliament.

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SCOTTISH INSTITUTE FOR SUSTAINABLE TECHNOLOGY

The Scottish Institute of Sustainable Technology Ltd (SISTech) is a partnership between Scottish Enterprise and Heriot-Watt University. It has been established to create an international centre of excellence in Scotland to promote the practical delivery of sustainable development through business development, education, and research & development.

SISTech is a not for profit organisation combining research with real life application across Scotland.

The Institute aims to be a key facilitator and catalyst in bringing together the various strands of business, education and research & development, and to secure environmental sustainability, wealth generation and social inclusion. It also plans to provide a vehicle to explore and exploit the potential world-wide market for sustainable technologies.

Business Development

SISTech are involved with improving sustainable development practice within existing companies, thus allowing them to adopt best practice, gain competitive advantage and enjoy the benefits of sound business growth.

Research & Development

Research concentrates on developing technology which encourages profit within industry. Capacity building exercises are used to identify potential areas of research and create networks to establish appropriate customers for the outputs.

Education and Awareness

Throughout Scotland an awareness-raising programme is essential if there is to be an increased understanding and uptake of sustainable development. To do this SISTech distribute a newsletter, organise events and get involved in initiatives aimed at increasing awareness within business, professional communities, decision-makers in government, students and the wider community.

Future Challenges

Resource Efficiency

Carry forward findings of packaging project to establishment of pilot scheme. This presents many challenges in terms of logistics and economics. Many lessons can be learned from other European countries- most notably Germany.

Behavioural Change

Increase application across the sustainability spectrum to change lifestyles.

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SCOTTISH NATURAL HERITAGE

Scotland's natural heritage is a unique and precious local, national and global asset. Its wildlife, habitats, and landscapes have evolved through a long partnership between people and nature, providing a wonderful setting for those living in, or visiting, Scotland. Scottish Natural Heritage (SNH) is a government body responsible for advising on the care, understanding, enjoyment and sustainable use of Scotland's natural heritage. We are funded by government and responsible to Ministers, and through them, to the Scottish Parliament.

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Our tasks are to:

- make sure Scotland's unique and precious natural heritage is conserved and enhanced;
- help people understand and enjoy Scotland's natural heritage;
- make sure that we all manage, use or enjoy the natural heritage in a sustainable way.

Natural heritage includes looking after and managing:

- wildlife and habitats;
- landscapes and its physical setting (including the geological environment);
- amenity and recreation;
- promoting responsible enjoyment of the natural world around us, and making sure all this is done sustainably.

We have expertise in natural heritage matters (earth sciences, peatlands, species, habitats, uplands and landscapes), land use (agriculture, woodlands, maritime, freshwater, planning, recreation and access, protected areas), and environmental education. We give advice to government and others on Scotland's natural heritage, including management, enhancement, policy and funding. We also advise and develop policies on sectors affecting the natural heritage including agriculture, fisheries, energy, regional aid and tourism. We work in partnership, by co-operation, negotiation and consensus, where possible, with all relevant interests in Scotland: public, private and voluntary organisations, and individuals. We operate in a devolved manner, delegating decision-making to the local level within the organisation to encourage and assist SNH to be accessible, sensitive and responsive to local needs and circumstances. Our remit covers Scotland's entire natural heritage, but we have a particular responsibility for safeguarding areas of natural heritage interest, including Sites of Special Scientific Interest (notified under domestic legislation for their biological, geological or geomorphological interests), National Nature Reserves, and National Scenic Areas (landscapes). We work on behalf of the Scottish Executive to implement the EU Birds and Habitats Directives, including advice on the Natura 2000 network and appropriate management. The context for our work is mainly Scotland, the UK, and the EU.

SCOTTISHPOWER

ScottishPower is a leading international energy company serving around five million customers in the UK and the Western United States.

The company's operations in the UK include electricity generation, energy management, gas storage, power delivery and retail energy sales and services. The company has around 3.7 million energy customers in the UK, including one million gas customers.

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ScottishPower's proactive approach to sustainable development has been recognised through many awards, including joint runner up position in the 2003 ACCA Awards for Environmental Reporting (the company was placed top in 2002). During 2002 we were named "Company of the Year" for our impact on society in the Business in the Community Awards and we won the Environmental Awareness Award in the inaugural National Business Awards.

The company received a Queen's Award in 2001 for a ground-breaking project to reduce emissions from coal-fired power stations.

ScottishPower consults on and contributes to the sustainability debate via a wide range of forums. The company consults regularly with stakeholder groups in developing and implementing its environmental policy and provides issues briefings to politicians and opinion formers, at local, national and international levels.

Future Challenges

It is clear that going forward we can expect to see a progressive increase in the proportion of national energy demand met from renewable sources. However, there will continue to be a role in the medium term for cleaned-up coal, along with gas-fired power, in balancing the intermittent output of renewables. Providing affordable and reliable supplies of electricity, with minimal environmental impact is the number one challenge facing energy companies such as ScottishPower. Cleaner power sources, efficient use of energy and strengthening the grid network will be the key components in achieving this aim.

Government mechanisms such as Renewables Obligations and the Climate Change Levy have helped to encourage the development of renewable energy in Scotland, while advances in wind turbine design have helped to improve the economic viability of wind power. However, continued support will be needed for renewable energy in the medium term, along with funding for the additional development work that will be necessary to bring wave, tidal, solar, biomass and other forms of renewable energy into the marketplace.

Co-operation between developers, planners, NGOs and local communities will be required to deliver the requisite number of renewable megawatts over the next 15 years. This will mean an approach from developers which is sympathetic to local people and ensuring that renewable energy developments, such as windfarms and small-scale hydro-electric plant, create community benefits. On the other side of the coin, it will require the planning authorities and local communities to embrace such projects and continue to play a constructive role in the planning process.

It must be recognised also that network development will be required to support renewable energy developments. A long-term strategic plan, which spreads the cost of network reinforcements between the developer and the network operators, possibly incorporating regulatory incentives for operators, would hasten the growth of renewable energy. But again, accelerated development would only be possible with the cooperation of the planning authorities.

In the interests of fuel diversity, supply security and network stability, there is a limit to the extent that renewable energy can be used to displace large base load plant. Efficient gas-fired plant, along with cleaned-up coal in the medium term, will therefore continue to have a role to play. Again, market mechanisms may have a part to play in bringing more clean coal technologies into the marketplace.

Sustainability means more than displacing conventional power with more energy from renewable sources. A clear message from the World Summit was that we all must develop more sustainable patterns of production and consumption.

In addition to using cleaner forms of generation, this means transmitting and distributing power efficiently and reducing energy use by adopting energy efficiency measures in business and in the home. It also means reducing consumption of materials generally and minimising waste through recycling and reuse of resources.

The challenges of sustainability are huge, but when organisations and individuals work together towards common goals the achievement is far greater than any one unit working in isolation. We believe the aims of sustainability – reducing energy use, avoiding environmental damage and subsequent clean-up costs, together with more efficient use of resources and minimising waste, can benefit both businesses and the environment.

Scotland, with its natural resources, renewable energy potential and devolved government is ideally placed to take a leading position on sustainability within the UK. If we can achieve this, other countries will look to Scotland for expertise, investment, technology and products. The most successful Scottish companies of the future will be the ones that embrace sustainability as an opportunity.

SCOTTISH WATER

Scottish Water is a relatively new organisation formed from the amalgamation of the three previous Scottish water authorities. We supply water and waste water services to all of Scotland.

As a new organisation we are currently developing a Sustainable Development policy although we inherited policies and actions from the previous authorities.

Scottish Water is a public sector model in the UK water industry. It remains answerable to the Scottish Parliament but is structured and managed like that of a private company.

Our Customers:

We serve over 5 million customers in Scotland with clean, safe and high quality drinking water and also provide them with sewerage services. We supply approximately 2.5 billion litres of water a day. We work in partnership with our business customers to create service solutions that meet their needs

Our Assets:

Scottish Water's assets are valued at €18 billion.

441 water treatment works

643 waste water treatment works

1127 service reservoirs

Our Environment:

Balancing economic, social and environmental considerations is vital to our business and we work towards bringing the environment and sustainable development issues to the forefront of business practice. Scottish Water's area includes 6200 miles of coastline which must be protected. We work with others including SEPA to protect Scotland's environment.

Scottish Water is a member of the Scotland Europa Environment Group through their membership of Water UK.

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STOW COLLEGE

Stow College is a Further Education college situated in the heart of Glasgow. Our courses are in the areas of Management and General Education, Science and Health, Music and Creative Industries, Engineering Technologies, and Computing and Internet Technologies. We have a commitment to sustainability, an environmental policy, and a member of staff seconded as a Sustainable Development Coordinator.

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Recently the college has been involved in a number of projects which have focused on the challenge of sustainable development. Working in partnership with others, Stow has sought to develop the curriculum and to make the management of the college more energy efficient. Stow College has tried to ensure that all students in every vocational area have an opportunity to engage with the challenges of Sustainable Development and to take with them an understanding that as individuals they can make a difference at home, at work and in the community. As a college we hope that we too can continue to 'do our bit' to promote sustainability.

Future Challenges

In the next five years we would hope to continue the process of embedding sustainability into the curriculum. We would like to see an increasing uptake for our energy courses and the development of new areas of curriculum to meet the needs of a sustainable Scotland.

STRATHCLYDE EUROPEAN PARTNERSHIP

Strathclyde European Partnership (SEP) Ltd administers EU Structural Funds in Western Scotland. The partnership involves a range of economic development agencies, as well as the European Commission and the Scottish Executive.

The central aim of EU Structural Funds is job creation, through projects in areas such as business development and finance, business infrastructure, tourism development, economic and social cohesion, and training. SEP Ltd administers some €420 million over the period 2000-2006. The appraisal and decision making process is undertaken by representatives of partner organisations, directly encouraging cross-agency working and replication of good practice.

The current Programmes, in Western Scotland and elsewhere, place much more emphasis on strengthening the environmental aspects of projects supported, in line with the wider aim of sustainable development. SEP has taken a proactive approach to this issue, both through the range of projects funded and the systems put in place to assess them. The examples below show both projects which are exploiting new environmental opportunities to create jobs, as well as mainstream projects which are adopting a more environmental approach in their delivery.

Future Challenges

Three important issues are likely to be:

Understanding and development monitoring systems which properly report environmental impacts at project level, but which do not involve excessive workload on the part of those collecting the information;

Similarly, further work is needed on the indirect economic and social benefits delivered at project level through environmental actions; and

Further integrating sustainable development issues into the content of training, so that future generations of employees are better able to contribute towards good environmental practice in their workplaces.

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TOURISM & ENVIRONMENT FORUM

The Tourism & Environment Forum is a partnership of public and private organisations set up to promote sustainable tourism in Scotland. We recognise that the environment is the Scottish tourism industry's main asset and we are working to ensure that both tourism and the environment are well managed.

Tourism provides a bridge between economic development and the environment. It can provide a major economic rationale for the protection and conservation of scenic and biologically valuable areas.

Furthermore it can generate direct visitor pay-back into the management of these areas and their economically fragile communities. Tourism thrives on a high quality natural and built environment. When the environment deteriorates, options for tourism also decline. In Scotland, tourism and the environment are both interrelated and interdependent and together provide a sustainable economic base.

Our mission is:

"to bring long term business and environmental benefits to the Scottish tourism industry through encouraging sustainable use of our world class natural and built heritage"

The Tourism & Environment Forum comprises a range of public, private and voluntary sector agencies. VisitScotland, Scottish Natural Heritage, Scottish Enterprise and Highlands & Islands Enterprise are funding partners and make up the steering group.

Future Challenges

TEF will continue to tackle sustainable tourism issues in Scotland. Much has been achieved and the profile of sustainable tourism is higher than ever before. But as competition for international tourists grows stronger and Scotland has to fight harder for its share of the world market, the key to long-term success will be to ensure that sustainability is kept at the heart of all tourism marketing and development plans.

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UHI MILLENNIUM INSTITUTE

UHI Millennium Institute (UHI) is a unique institution – a partnership of thirteen Academic Partners, two Associate Institutions and an Executive Office. Through its constituent partners, it delivers a wide range of higher education services across the Highlands and Islands, including degree and higher national programmes, continuing professional development and lifelong learning, research programmes and research activities.

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The UHI project was set in motion in 1992, with the primary objective of establishing a University of the Highlands and Islands. The project sought to draw on the distinctive cultures and characteristics of the region to provide opportunities for access to higher education across a range of subjects, to contribute to the economic development and to help the area it serves. Since the project began, it has attracted nearly €140 million in funding, including over €21 million from European Union Structural Funds. These funds have been used to enhance provision in the partner colleges and to build the academic, administrative and electronic infrastructure to work towards meeting the very high expectations of UHI. Central to the impetus that set in motion the UHI project was the clearly defined need for a university institution to help generate and reinvigorate the economic, social and cultural development and enhancement of the communities served by UHI.

UHI was designated as a Higher Education Institution in April 2001, enabling further development of university-level programmes. Degree courses are currently validated by the Open University Validation Services – in the Academic Year 2001-2002 5,610 (3,557 Full time equivalent) students were enrolled in UHI courses. The stated aims are to achieve university status in 2007 and to be recognised as a major contributor and innovator in the development of tertiary education.

There are two general aspects of UHI activity which relate to sustainable development:

- Acting as a major agent for sustaining communities across the Highlands & Islands
- Promoting research and training in the themes of the European Commission's Sixth Environment Action Programme, which are of particular relevance to the academic portfolio of UHI

Future Challenges

Through achieving university status by 2007, UHI will make a major contribution towards the sustainability of communities across the Highlands and Islands, as well as the economic and social well-being of the region itself.

The timetable for progression to degree-awarding powers and university status represents a considerable challenge, but achieving a top quality university is of critical importance to the area's development.

To date, we have worked closely with higher education institutions in areas similar to our own, particularly in northern Scandinavian countries. For example, in the Project 'Community Learning Networks in Northern Periphery Areas', Phases 1 and 2, UHI has worked with Akademi Norr in Sweden, Bodo University in Norway, Rovaniemi Polytechnic in Finland and Akeyruri University in Iceland to investigate education and training provision in peripheral, sparsely populated areas.

We would expect to continue to benefit from these links and learn from our joint development work.

This additional element of UHI's provision illustrates the crucial role that UHI has to play in supporting long term sustainability of communities in our region.

Further development and promotion of the courses and research activities outlined above will also take place.

UK OFFSHORE OPERATORS ASSOCIATION

The UK Offshore Operators Association (UKOOA) is the representative organisation for the UK Offshore Oil and Gas Industry. Its Members are companies licensed by the Government to explore for and produce oil and gas in UK waters. UKOOA's mission is to provide leadership to maintain the development of a forward-looking profitable, thriving and responsible offshore oil and gas industry and to enhance its reputation and develop relationships with government, public and other stakeholders.

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The UK Offshore Oil and Gas industry was one of the first industrial sectors to publish a Sustainable Development Strategy in 2001. The strategy committed the industry to balance the considerable economic and social benefits derived from its investment, activity and products, with good stewardship of the world's natural resources and with environmental care. The industry also agreed to an annual review of its progress towards its targets. In its 2002 review the industry acknowledged that whilst some targets had not been reached approximately 90% of the 63 commitments were either on target or progressing satisfactorily. UKOOA will publish an updated Sustainability Strategy in July 2003.

Future Challenges

UKOOA's Sustainable Development Strategy commits the industry to continued engagement with all stakeholders, legislators, regulators and opinion formers. The industry is well versed in working in partnership with others, as demonstrated by PILOT, the Step Change in Safety initiative and the Stakeholder Dialogue. The industry is also committed to the sharing of best practice across all aspects of its activities. This has been reinforced by the recently established UK/Norway Joint Government/Industry Work Group which seeks to unlock the potential of the North Sea's oil and gas reserves through closer co-operation.

UNIVERSITY OF PAISLEY

The University of Paisley has a long history of educational, research and training activities in areas that directly support sustainable development. Our applied and vocational approach has embedded strong links with the local business community, whilst activity has national and international significance in many areas.

Teaching & Training Provision

With core skills in Science, Engineering & Technology, provision in this area focuses on waste, safety and environmental management in its broadest sense. We have a flexible approach to provision, with many modules available through part time routes and for full programmes, credit for relevant prior experience can be given.

Research and Commercial Activities

Our research is characterised by strong applied and industrial relevance. Since the early 1990's, staff have been closely involved in the development of a responsive R&D interface with industry on a local, national and international level. This has been through the continued development of three industrial units: the Centre for Particle Characterisation & Analysis (CPCA); the Centre for Environmental & Waste Management (CEWM); the Biotechnology Transfer Centre (BTCF). The units together support 10 staff, who are engaged in environmentally relevant R&D in the areas of integrated pollution prevention and control, waste and environmental management.

In addition to this commercial approach, a substantial core research activity is focused within the newly formed School of Science & Engineering, specifically with staff from within the Divisions of Biological Sciences, Chemistry & Chemical Engineering and Civil Engineering.

The Environmental Initiatives Research Group is an over-arching research initiative established to coordinate and develop relevant research activity. It supports the two research themes Waste & Pollution Management (WPM) and Natural Resources & Agricultural Management (NRAM) and their component projects, by organising project teams to make funding bids internally and externally, networking to broaden membership and establish collaboration. Whilst there are distinct groups of research, collaboration between groups is common and research teams work together on truly interdisciplinary programmes.

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